# FIVE-PLACE
# LOGARITHMIC AND TRIGONOMETRIC
# TABLES

WENTWORTH AND HILL
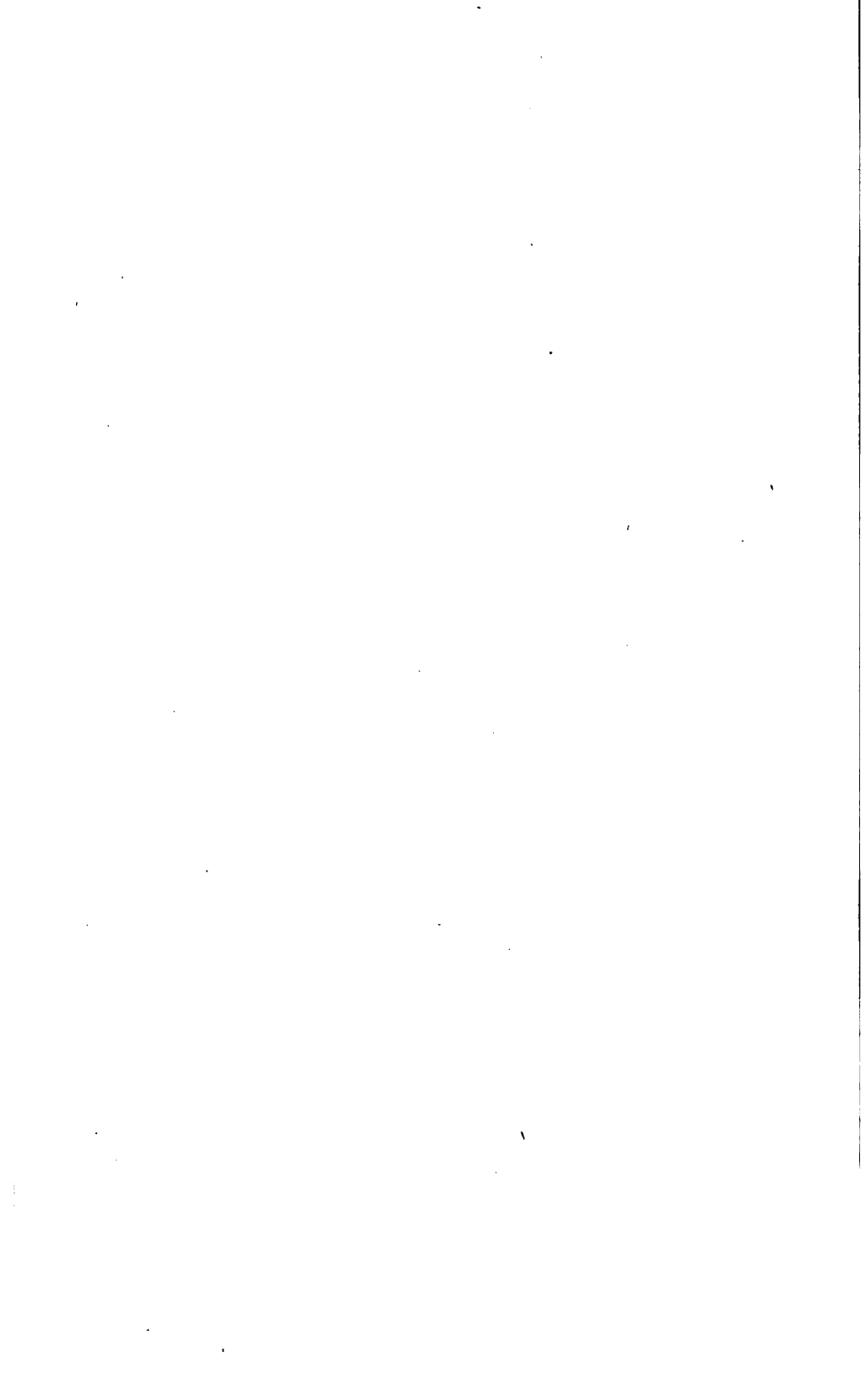
# FIVE-PLACE

# LOGARITHMIC AND TRIGONOMETRIC TABLES.

ARRANGED BY

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# INTRODUCTION.

——∘∘⁀∘⁀∘∘——

**1.** If the natural numbers are regarded as powers of ten, the exponents of the powers are the Common or Briggs Logarithms of the numbers. If $A$ and $B$ denote natural numbers, $a$ and $b$ their logarithms, then $10^a = A$, $10^b = B$; or, written in logarithmic form,

$$\log A = a, \qquad \log B = b..$$

**2.** The logarithm of a product is found by adding the logarithms of its factors.

> For, $\qquad A \times B = 10^a \times 10^b = 10^{a+b}$.
> Therefore, $\quad \log(A \times B) = a + b = \log A + \log B$.

**3.** The logarithm of a quotient is found by subtracting the logarithm of the divisor from that of the dividend.

> For, $\qquad \dfrac{A}{B} = \dfrac{10^a}{10^b} = 10^{a-b}$.
> Therefore, $\quad \log \dfrac{A}{B} = a - b = \log A - \log B$.

**4.** The logarithm of a power of a number is found by multiplying the logarithm of the number by the exponent of the power.

> For, $\qquad A^n = (10^a)^n = 10^{an}$.
> Therefore, $\quad \log A^n = an = n \log A$.

**5.** The logarithm of the root of a number is found by dividing the logarithm of the number by the index of the root.

> For, $\qquad \sqrt[n]{A} = \sqrt[n]{10^a} = 10^{\frac{a}{n}}$.
> Therefore, $\quad \log \sqrt[n]{A} = \dfrac{a}{n} = \dfrac{\log A}{n}$.

**6.** The logarithms of 1, 10, 100, etc., and of 0.1, 0.01, 0.001, etc., are integral numbers. The logarithms of all other numbers are fractions.

For,  $10^0 =$  1, hence    $\log 1 = 0$;      $10^{-1} =$  0.1, hence    $\log 0.1 = -1$;
$\quad\quad 10^1 =$  10, hence    $\log 10 = 1$;      $10^{-2} =$  0.01, hence  $\log 0.01 = -2$;
$\quad\quad 10^2 =$  100, hence   $\log 100 = 2$;      $10^{-3} = 0.001$, hence  $\log 0.001 = -3$;
$\quad\quad 10^3 = 1000$, hence $\log 1000 = 3$;              and so on.

If the number is between   1 and    10, the logarithm is between   0 and   1.
If the number is between   10 and   100, the logarithm is between   1 and   2.
If the number is between  100 and  1000, the logarithm is between   2 and   3.
If the number is between   1 and   0.1, the logarithm is between   0 and  −1.
If the number is between  0.1 and  0.01, the logarithm is between  −1 and  −2.
If the number is between 0.01 and 0.001, the logarithm is between  −2 and  −3.
And so on.

**7.** If the number is less than 1, the logarithm is negative (§ 6), but is written in such a form that the *fractional part* is always *positive*.

For the number may be regarded as the product of two factors, one of which lies between 1 and 10, and the other is a negative power of 10; the logarithm will then take the form of a *difference* whose minuend is a positive proper fraction, and whose subtrahend is a positive integral number.

Thus,          $0.48 = 4.8 \times 0.1$.
Therefore (§ 2), log   $0.48 = \log 4.8 + \log 0.1 = 0.68124 - 1$.  (Page 1.)
Again,          $0.0007 = 7 \times 0.0001$.
Therefore,      $\log 0.0007 = \log 7 + \log 0.0001 = 0.84510 - 4$.

**8.** Every logarithm, therefore, consists of two parts: a positive or negative integral number, which is called the **Characteristic**, and a *positive* proper fraction, which is called the **Mantissa**.

Thus, in the logarithm 3.52179, the integral number 3 is the characteristic, and the fraction .52179 the mantissa. In the logarithm $0.78254 - 2$, the integral number − 2 is the characteristic, and the fraction .78254 is the mantissa.

**9.** If the logarithm is negative, it is customary to change the form of the difference so that the subtrahend shall be 10 or a multiple of 10. This is done by adding to both minuend and subtrahend a number which will increase the subtrahend to 10 or a multiple of 10.

Thus, the logarithm $0.78254 - 2$ is changed to $8.78254 - 10$ by adding 8 to both minuend and subtrahend. The logarithm $0.92737 - 13$ is changed to $7.92737 - 20$ by adding 7 to both minuend and subtrahend.

**10.** The following rules are derived from § 6 : —

If the number is *greater than* 1, make the characteristic of the logarithm *one unit less* than the number of figures on the left of the decimal point.

If the number is *less than* 1, make the characteristic of the logarithm *negative*, and *one unit more* than the number of zeros between the decimal point and the first significant figure of the given number.

If the characteristic of a given logarithm is *positive*, make the number of figures in the integral part of the corresponding number *one more* than the number of units in the characteristic.

If the characteristic is *negative*, make the number of zeros between the decimal point and the first significant figure of the corresponding number *one less* than the number of units in the characteristic.

Thus, the characteristic of log 7849.27 = 3 ;

the characteristic of log 0.037 = — 2 = 8.00000 — 10.

If the characteristic is 4, the corresponding number has five figures in its integral part. If the characteristic is — 3, that is, 7.00000 — 10, the corresponding fraction has two zeros between the decimal point and the first significant figure.

**11.** The logarithms of numbers that can be derived from one another by multiplication or division by an integral power of 10 have the same mantissa.

For, multiplying or dividing a number by an integral power of 10 will increase or diminish its logarithm by the exponent of that power of 10; and since this exponent is an integer, the mantissa of the logarithm will be unaffected.

Thus,    log 4.6021    = 0.66296.   (Page 9.)

log 460.21    = log (4.6021 × 10²) = log 4.6021 + log 10²
= 0.66296 + 2 = 2.66296.

log 460210    = log (4.6021 × 10⁵) = log 4.6021 + log 10⁵
= 0.66296 + 5 = 5.66296.

log 0.046021 = log (4.6021 ÷ 10²) = log 4.6021 — log 10²
= 0.66296 — 2 = 8.66296 — 10.

## TABLE I.

**12.** In this table (pp. 1–19) the vertical columns headed N contain

$$\log 0.54936 = 9.73986 - 10$$

$$\operatorname{colog} \frac{1}{a''} = \log a'' = 5.31443$$

$$\log \text{angle} = 5.05429 = \log 113316$$

$$\therefore \text{angle} = 113316'' = 31° 28' 36''$$

**23.** The relations between arcs and angles given in Table II. are readily deduced from the circular measure of an angle.

In **Circular Measure** an angle is defined by the equation

$$\text{angle} = \frac{\text{arc}}{\text{radius}},$$

in which the word arc denotes the length of the arc corresponding to the angle, when both arc and radius are expressed in terms of the *same linear unit.*

Since the arc and radius for a given angle in different circles vary in the same ratio, the value of the angle given by this equation is independent of the value of the radius.

The angle which is measured by a radius-arc is called a **Radian,** and is the *angular unit* in circular measure.

Since $C = 2\pi R$, it follows that $\dfrac{C}{R} = 2\pi$, and $\dfrac{\frac{1}{2}C}{R} = \pi$.   Therefore,

If the arc = circumference,         the angle = $2\pi$.
If the arc = semicircumference, the angle = $\pi$.
If the arc = quadrant,                 the angle = $\frac{1}{2}\pi$.
If the arc = radius,                      the angle = 1.

Therefore,  $\pi = 180°$,  $\frac{1}{2}\pi = 90°$,  $\frac{1}{3}\pi = 60°$,  $\frac{1}{4}\pi = 45°$,  $\frac{1}{6}\pi = 30°$, $\frac{1}{8}\pi = 22\frac{1}{2}°$, and so on.

Since 180° in common measure equals $\pi$ units in circular measure,

1° in common measure    $= \dfrac{\pi}{180}$ units in circular measure ;

1 unit in circular measure $= \dfrac{180°}{\pi}$ in common measure.

By means of these two equations, the value of an angle expressed in one measure may be changed to its value in the other measure.

Thus, the angle whose arc is equal to the radius is an angle of 1 unit in circular measure, and is equal to $\dfrac{180°}{\pi}$, or 57° 17′ 45″, very nearly.

### TABLE III.

**24.** This table (pp. 21–49) contains the logarithms of the trigonometric functions of angles.   In order to avoid negative characteristics, the characteristic of every logarithm is printed 10 too large. Therefore, − 10 is to be annexed to each logarithm.

On pages 28–49 the characteristic remains the same throughout each column, and is printed at the top and the bottom of the column. But on pp. 30, 49, the characteristic changes one unit in value at the places marked with bars.   Above these bars the proper characteristic is printed at the top, and below them at the bottom, of the column.

**25.** On pages 28–49 the log sin, log tan, log cot, and log cos, of 1° to 89°, are given to every minute.   Conversely, this part of the table gives the value of the angle to the nearest minute when log sin, log tan, log cot, or log cos is known, provided log sin or log cos lies between 8.23822 and 9.99992, and log tan or log cot lies between 8.23829 and 11.76171.

If the exact value of the given logarithm of a function is not found in the table, the value nearest to it is to be taken, unless interpolation is employed as explained in § 26.

If the angle is less than 45°, the number of degrees is printed at the top of the page, and the number of minutes in the column to the left of the columns containing the logarithm. If the angle is greater than 45°, the number of degrees is printed at the bottom of the page, and the number of minutes in the column to the right of the columns containing the logarithms.

If the angle is less than 45°, the names of its functions are printed at the top of the page; if greater than 45°, at the bottom of the page. Thus,

Page 38. log sin 21° 37′ = 9.56631 − 10.
Page 45. log cot 36° 53′ = 10.12473 − 10 = 0.12473.
Page 37. log cos 69° 14′ = 9.54969 − 10.
Page 49. log tan 45° 59′ = 10.01491 − 10 = 0.01491.
Page 48. If log cos = 9.87468 − 10, angle = 41° 28′.
Page 34. If log cot = 9.39353 − 10, angle = 76° 6′.

If log sin = 9.47760 − 10, the nearest log sin in the table is 9.47774 − 10 (page 36), and the angle corresponding to this value is 17° 29′.

If log tan = 0.76520 = 10.76520 − 10, the nearest log tan in the table is 10.76490 − 10 (page 32), and the angle corresponding to this value is 80° 15′.

**26.** If it is desired to obtain the logarithms of the functions of angles that contain seconds, or to obtain the value of the angle in degrees, minutes, and seconds, from the logarithms of its functions, interpolation must be employed. Here it must be remembered that,

The difference between two consecutive angles in the table is 60″.

Log sin and log tan increase as the angle increases; log cos and log cot diminish as the angle increases.

Find log tan 70° 46′ 8″.

Page 37. log tan 70° 46′ = 0.45731.

The difference between the mantissas of log tan 70° 46′ and log tan 70° 47′ is 41, and $\frac{8}{60}$ of 41 = 5.

As the function is increasing, the 5 must be added to the figure in the fifth place of the mantissa 45731; and

Therefore log tan 70° 46′ 8″ = 0.45736.

Find log cos 47° 35′ 4″.

Page 48. log cos 47° 35′ = 9.82899 − 10.

The difference between this mantissa and the mantissas of the next log cos is 14, and $\frac{4}{60}$ of 14 = 1.

As the function is decreasing, the 1 must be subtracted from the figure in the fifth place of the mantissa 82899; and

Therefore log cos 47° 35′ 4″ = 9.82898 − 10.

Find the angle for which log sin = 9.45359 − 10.

Page 35. The mantissa of the nearest smaller log sin in the table is **45334**.
The angle corresponding to this value is 16° 30′.
The difference between 45334 and the given mantissa, 45359, is 25.
The difference between 45334 and the next following mantissa, **45377**, is
43, and $\frac{25}{43}$ of 60″ = 35″.
As the function is increasing, the 35″ must be added to 16° 30′; and the
required angle is 16° 30′ 35″.

Find the angle for which log cot = 0.73478.

Page 32. The mantissa of the nearest smaller log cot in the table is **73415**.
The angle corresponding to this value is 10° 27′.
The difference between 73415 and the given mantissa is 63.
The difference between 73415 and next following mantissa is 71, and
$\frac{63}{71}$ of 60″ = 53″.
As the function is decreasing, the 53″ must be subtracted from 10° 27′;
and the required angle is 10° 26′ 7″.

**27.** If log sec or log csc of an angle is desired, it may be found
from the table by the formulas,

$$\sec A = \frac{1}{\cos A}; \quad \text{hence, } \log \sec A = \text{colog} \cos A.$$

$$\csc A = \frac{1}{\sin A}; \quad \text{hence, } \log \csc A = \text{colog} \sin A.$$

Page 31.  log sec  8° 28′    = colog cos  8° 28′    = 0.00476.
Page 42.  log csc 59° 36′ 44″ = colog sin 59° 36′ 44″ = 0.06418.

**28.** If a given angle is between 0° and 1°, or between 89° and 90° ;
or, conversely, if a given log sin or log cos does *not* lie between the
limits 8.23822 and 9.99992 in the table ; or, if a given log tan or
log cot does *not* lie between the limits 8.23829 and 11.76171 in the
table ; then pages 21–24 of Table III. must be used.

On page 21, log sin of angles between 0° and 0° 3′, or log cos of the
complementary angles between 89° 57′ and 90°, are given to every
second ; for the angles between 0° and 0° 3′, log tan = log sin, and
log cos = 0.00000 ; for the angles between 89° 57′ and 90°, log cot =
log cos, and log sin = 0.00000.

On pages 22–24, log sin, log tan, and log cos of angles between 0°
and 1°, or log cos, log cot, and log sin of the complementary angles
between 89° and 90°, are given to every 10″.

Whenever log tan or log cot is not given, they may be found by the
formulas,

log tan = colog cot.           log cot = colog tan.

Conversely, if a given log tan or log cot is not contained in the
table, then the colog must be found ; this will be the log cot or
log tan, as the case may be, and will be contained in the table.

On pages 25–27 the logarithms of the functions of angles between 1° and 2°, or between 88° and 90°, are given in the manner employed on pages 22–24. These pages should be used if the angle lies between these limits, and if not only degrees and minutes, but degrees, minutes, and multiples of 10″ are given or required.

When the angle is between 0° and 2°, or 88° and 90°, and a greater degree of accuracy is desired than that given by the table, interpolation may be employed; but for these angles interpolation does not always give true results, and it is better to use Table IV.

Find log tan 0° 2′ 47″, and log cos 89° 37′ 20″.

    Page 21.    log tan 0° 2′ 47″   = log sin 0° 2′ 47″ = 6.90829 − 10.
    Page 23.    log cos 89° 37′ 20″ = 7.81911 − 10.

Find log cot 0° 2′ 15″.

                               10      − 10
    Page 21.    log tan 0° 2′ 15″   =  6.81591 − 10
    Therefore,  log cot 0° 2′ 15″   =  3.18409

Find log tan 89° 38′ 30″.

                               10      − 10
    Page 23.    log cot 89° 38′ 30″ =  7.79617 − 10
    Therefore,  log tan 89° 38′ 30″ =  2.20383

Find the angle for which log tan = 6.92090 − 10.

    Page 21.  The nearest log tan is 6.92110 − 10.
    The corresponding angle for which is 0° 2′ 52″.

Find the angle for which log cos = 7.70240 − 10.

    Page 22.  The nearest log cos is 7.70261 − 10.
    The corresponding angle for which is 89° 42′ 40″.

Find the angle for which log cot = 2.37368.

This log cot is not contained in the table.
The colog cot = 7.62632 − 10 = log tan.
The log tan in the table nearest to this is (page 22) 7.62510 − 10, and the angle corresponding to this value of log tan is 0° 14′ 30″.

**29.** If an angle $x$ is between 90° and 360°, it follows, from formulas established in Trigonometry, that,

    between 90° and 180°,                     between 180° and 270°,

log sin $x$ = log sin $(180° − x)$,         log sin $x$ = log sin $(x − 180°)_n$,
log cos $x$ = log cos $(180° − x)_n$,       log cos $x$ = log cos $(x − 180°)_n$,
log tan $x$ = log tan $(180° − x)_n$,       log tan $x$ = log tan $(x − 180°)$,
log cot $x$ = log cot $(180° − x)_n$ ;      log cot $x$ = log cot $(x − 180°)$ ;

between 270° and 360°,

$$\log \sin x = \log \sin (360° - x)_n,$$
$$\log \cos x = \log \cos (360° - x),$$
$$\log \tan x = \log \tan (360° - x)_n,$$
$$\log \cot x = \log \cot (360° - x)_n.$$

The letter $n$ is placed (according to custom) after the logarithms of those functions which are negative in value.

The above formulas show, without further explanation, how to find by means of Table III. the logarithms of the functions of any angle between 90° and 360°.

Thus,   $\log \sin 137° 45' 22'' = \log \sin \quad 42° 14' 38'' = 9.82756 \quad - 10.$
          $\log \cos 137° 45' 22'' = \log_n \cos 42° 14' 38'' = 9.86940_n - 10.$
          $\log \tan 137° 45' 22'' = \log_n \tan 42° 14' 38'' = 9.95815_n - 10.$
          $\log \cot 137° 45' 22'' = \log_n \cot 42° 14' 38'' = 0.04185_n.$
          $\log \sin 209° 32' 50'' = \log_n \sin 29° 32' 50'' = 9.69297_n - 10.$
          $\log \cos 330° 27' 10'' = \log \cos \quad 29° 32' 50'' = 9.93949 \quad - 10.$

Conversely, to a given logarithm of a trigonometric function there correspond between 0° and 360° four angles, one angle in each quadrant, and so related that if $x$ denote the acute angle, the other three angles are $180° - x$, $180° + x$, and $360° - x$.

If besides the given logarithm it is known whether the function is positive or negative, the ambiguity is confined to *two* quadrants, therefore to *two* angles.

Thus, if the $\log \tan = 9.47451 - 10$, the angles are 16° 36' 17'' in Quadrant I. and 196° 36' 17'' in Quadrant III.; but if the $\log \tan = 9.47451_n - 10$, the angles are 163° 23' 43'' in Quadrant II. and 343° 23' 43'' in Quadrant IV.

To remove all ambiguity, further conditions are required, or a knowledge of the special circumstances connected with the problem in question.

## TABLE IV.

**30.** This table (page 50) must be used when great accuracy is desired in working with angles between 0° and 2°, or between 88° and 90°.

The values of **S** and **T** are such that when the angle $a$ is expressed in seconds,

$$S = \log \sin a - \log a'',$$
$$T = \log \tan a - \log a''.$$

Hence follow the formulas given on page 50.

The values of **S** and **T** are printed with the characteristic 10 too large, and in using them $-10$ must always be annexed.

Find log sin 0° 58' 17".

$$0° 58' 17'' = 3497''$$
$$\log 3497 = 3.54370$$
$$S = 4.68555 - 10$$
$$\overline{\log \sin 0° 58' 17'' = 8.22925 - 10}$$

Find log cos 88° 26' 41.2".

$$90° - 88° 26' 41.2'' = 1° 33' 18.8''$$
$$= 5598.8''$$
$$\log 5598.8 = 3.74809$$
$$S = 4.68552 - 10$$
$$\overline{\log \cos 88° 26' 41.2'' = 8.43361 - 10}$$

Find log tan 0° 52' 47.5".

$$0° 52' 47.5'' = 3167.5''$$
$$\log 3167.5 = 3.50072$$
$$T = 4.68561 - 10$$
$$\overline{\log \tan 0° 52' 47.5'' = 8.18633 - 10}$$

Find log tan 89° 54' 37.362".

$$90° - 89° 54' 37.362'' = 0° 5' 22.638'$$
$$= 322.638''$$
$$\log 322.638 = 2.50871$$
$$T = 4.68558 - 10$$
$$\overline{\log \cot 89° 54' 37.362'' = 7.19429 - 10}$$
$$\log \tan 89° 54' 37.362'' = 2.80571$$

Find the angle, if log sin = 6.72306 — 10.

$$6.72306 - 10$$
$$S = 4.68557 - 10$$
$$\overline{\text{Subtract,} \quad 2.03749 \quad = \log 109.015}$$
$$109.015'' = 0° 1' 49.015''$$

Find the angle for which log cot = 1.67604.

$$\text{colog cot} = 8.32396 - 10$$
$$T = 4.68564 - 10$$
$$\overline{\text{Subtract,} \quad 3.63832 \quad = \log 4348.3}$$
$$4348.3'' = 1° 12' 28.3''$$

Find the angle for which log tan = 1.55407.

$$\text{colog tan} = 8.44593 - 10$$
$$T = 4.68569 - 10$$
$$\overline{\text{Subtract,} \quad 3.76024 \quad = \log 5757.6}$$
$$5757.6'' = 1° 35' 57.6'',$$
and    $90° - 1° 35' 57.6'' = 88° 24' 2.4''.$
Therefore, the angle required is 88° 24' 2.4".

## TABLE V.

**31.** This table (p. 51), containing the circumferences and areas of circles, does not require explanation.

## TABLE VI.

**32.** Table VI. (pp. 52–69) contains the natural sines, cosines, tangents, and cotangents of angles from 0° to 90°, at intervals of 1'. If greater accuracy is desired it may be obtained by interpolation.

NOTE. In preparing the preceding explanations, we have made free use of the Logarithmic Tables by F. G. Gauss. For Table VI. we are indebted to D. Carhart.

## TABLE VII.

**33.** This table (pp. 70–75) gives the latitude and departure to three places of decimals for distances from 1 to 10, corresponding to bearings from 0° to 90° at intervals of 15′.

If the bearing does not exceed 45° it is found in the *left*-hand column, and the designations of the columns under " Distance " are taken from the *top* of the page ; but if the bearing exceeds 45°, it is found in the *right*-hand column, and the designations of the columns under " Distance " are taken from the *bottom* of the page.

The method of using the table will be made plain by the following examples : —

(1) Let it be required to find the latitude and departure of the course N. 35° 15′ E. 6 chains.

On p. 60, left-hand column, look for 35° 15′ ; opposite this bearing, in the vertical column headed " Distance 6," are found 4.900 and 3.463 under the headings " Latitude " and " Departure " respectively. Hence, latitude or northing = 4.900 chains, and departure or easting = 3.463 chains.

(2) Let it be required to find the latitude and departure of the course S. 87° W. 2 chains.

As the bearing exceeds 45°, we look in the right-hand column of p. 55, and opposite 87° in the column marked " Distance 2 " we find (taking the designations of the columns from the bottom of the page) latitude = .105 chains, and departure = 1.997 chains. Hence, latitude or southing = .105 chains, and departure or westing = 1.997 chains.

(3) Let it be required to find the latitude and departure of the course N. 15° 45′ W. 27.36 chains.

In this case we find the required numbers for each figure of the distance separately, arranging the work as in the following table. In practice, only the last columns under " Latitude " and " Departure " are written.

| Distance. | Latitude. | Departure. |
|---|---|---|
| 20    = 2 × 10 | 1.925 × 10  = 19.25 | 0.543 × 10   · 5.43 |
| 7 |              6.737 |              1.90 |
| 0.3  = 3 ÷ 10 | 2.887 ÷ 10  =  0.289 | 0.814 ÷ 10  = 0.081 |
| 0.06 = 6 ÷ 100 | 5.775 ÷ 100 =  0.058 | 1.628 ÷ 100 = 0.016 |
| 27.36 | 26.334 | 7.427 |

Hence, latitude = 26.334 chains, and departure = 7.427 chains.

# TABLE I.

—◆—

THE

# COMMON OR BRIGGS LOGARITHMS

OF THE

# NATURAL NUMBERS

## From 1 to 10000.

—◆—

## 1—100

| N | log | N | log | N | log | N | log | N | log |
|---|-----|---|-----|---|-----|---|-----|---|-----|
| 1 | 0. 00 000 | 21 | 1. 32 222 | 41 | 1. 61 278 | 61 | 1. 78 533 | 81 | 1. 90 849 |
| 2 | 0. 30 103 | 22 | 1. 34 242 | 42 | 1. 62 325 | 62 | 1. 79 239 | 82 | 1. 91 381 |
| 3 | 0. 47 712 | 23 | 1. 36 173 | 43 | 1. 63 347 | 63 | 1. 79 934 | 83 | 1. 91 908 |
| 4 | 0. 60 206 | 24 | 1. 38 021 | 44 | 1. 64 345 | 64 | 1. 80 618 | 84 | 1. 92 428 |
| 5 | 0. 69 897 | 25 | 1. 39 794 | 45 | 1. 65 321 | 65 | 1. 81 291 | 85 | 1. 92 942 |
| 6 | 0. 77 815 | 26 | 1. 41 497 | 46 | 1. 66 276 | 66 | 1. 81 954 | 86 | 1. 93 450 |
| 7 | 0. 84 510 | 27 | 1. 43 136 | 47 | 1. 67 210 | 67 | 1. 82 607 | 87 | 1. 93 952 |
| 8 | 0. 90 309 | 28 | 1. 44 716 | 48 | 1. 68 124 | 68 | 1. 83 251 | 88 | 1. 94 448 |
| 9 | 0. 95 424 | 29 | 1. 46 240 | 49 | 1. 69 020 | 69 | 1. 83 885 | 89 | 1. 94 939 |
| 10 | 1. 00 000 | 30 | 1. 47 712 | 50 | 1. 69 897 | 70 | 1. 84 510 | 90 | 1. 95 424 |
| 11 | 1. 04 139 | 31 | 1. 49 136 | 51 | 1. 70 757 | 71 | 1. 85 126 | 91 | 1. 95 904 |
| 12 | 1. 07 918 | 32 | 1. 50 515 | 52 | 1. 71 600 | 72 | 1. 85 733 | 92 | 1. 96 379 |
| 13 | 1. 11 394 | 33 | 1. 51 851 | 53 | 1. 72 428 | 73 | 1. 86 332 | 93 | 1. 96 848 |
| 14 | 1. 14 613 | 34 | 1. 53 148 | 54 | 1. 73 239 | 74 | 1. 86 923 | 94 | 1. 97 313 |
| 15 | 1. 17 609 | 35 | 1. 54 407 | 55 | 1. 74 036 | 75 | 1. 87 506 | 95 | 1. 97 772 |
| 16 | 1. 20 412 | 36 | 1. 55 630 | 56 | 1. 74 819 | 76 | 1. 88 081 | 96 | 1. 98 227 |
| 17 | 1. 23 045 | 37 | 1. 56 820 | 57 | 1. 75 587 | 77 | 1. 88 649 | 97 | 1. 98 677 |
| 18 | 1. 25 527 | 38 | 1. 57 978 | 58 | 1. 76 343 | 78 | 1. 89 209 | 98 | 1. 99 123 |
| 19 | 1. 27 875 | 39 | 1. 59 106 | 59 | 1. 77 085 | 79 | 1. 89 763 | 99 | 1. 99 564 |
| 20 | 1. 30 103 | 40 | 1. 60 206 | 60 | 1. 77 815 | 80 | 1. 90 309 | 100 | 2. 00 000 |
| N | log | N | log | N | log | N | log | N | log |

| N | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
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| **103** | 01 284 | 01 326 | 01 368 | 01 410 | 01 452 | 01 494 | 01 536 | 01 578 | 01 620 | 01 662 |
| **104** | 01 703 | 01 745 | 01 787 | 01 828 | 01 870 | 01 912 | 01 953 | 01 995 | 02 036 | 02 078 |
| **105** | 02 119 | 02 160 | 02 202 | 02 243 | 02 284 | 02 325 | 02 366 | 02 407 | 02 449 | 02 490 |
| **106** | 02 531 | 02 572 | 02 612 | 02 653 | 02 694 | 02 735 | 02 776 | 02 816 | 02 857 | 02 898 |
| **107** | 02 938 | 02 979 | 03 019 | 03 060 | 03 100 | 03 141 | 03 181 | 03 222 | 03 262 | 03 302 |
| **108** | 03 342 | 03 383 | 03 423 | 03 463 | 03 503 | 03 543 | 03 583 | 03 623 | 03 663 | 03 703 |
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| **112** | 04 922 | 04 961 | 04 999 | 05 038 | 05 077 | 05 115 | 05 154 | 05 192 | 05 231 | 05 269 |
| **113** | 05 308 | 05 346 | 05 385 | 05 423 | 05 461 | 05 500 | 05 538 | 05 576 | 05 614 | 05 652 |
| **114** | 05 690 | 05 729 | 05 767 | 05 805 | 05 843 | 05 881 | 05 918 | 05 956 | 05 994 | 06 032 |
| **115** | 06 070 | 06 108 | 06 145 | 06 183 | 06 221 | 06 258 | 06 296 | 06 333 | 06 371 | 06 408 |
| **116** | 06 446 | 06 483 | 06 521 | 06 558 | 06 595 | 06 633 | 06 670 | 06 707 | 06 744 | 06 781 |
| **117** | 06 819 | 06 856 | 06 893 | 06 930 | 06 967 | 07 004 | 07 041 | 07 078 | 07 115 | 07 151 |
| **118** | 07 188 | 07 225 | 07 262 | 07 298 | 07 335 | 07 372 | 07 408 | 07 445 | 07 482 | 07 518 |
| **119** | 07 555 | 07 591 | 07 628 | 07 664 | 07 700 | 07 737 | 07 773 | 07 809 | 07 846 | 07 882 |
| **120** | 07 918 | 07 954 | 07 990 | 08 027 | 08 063 | 08 099 | 08 135 | 08 171 | 08 207 | 08 243 |
| **121** | 08 279 | 08 314 | 08 350 | 08 386 | 08 422 | 08 458 | 08 493 | 08 529 | 08 565 | 08 600 |
| **122** | 08 636 | 08 672 | 08 707 | 08 743 | 08 778 | 08 814 | 08 849 | 08 884 | 08 920 | 08 955 |
| **123** | 08 991 | 09 026 | 09 061 | 09 096 | 09 132 | 09 167 | 09 202 | 09 237 | 09 272 | 09 307 |
| **124** | 09 342 | 09 377 | 09 412 | 09 447 | 09 482 | 09 517 | 09 552 | 09 587 | 09 621 | 09 656 |
| **125** | 09 691 | 09 726 | 09 760 | 09 795 | 09 830 | 09 864 | 09 899 | 09 934 | 09 968 | 10 003 |
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| **127** | 10 380 | 10 415 | 10 449 | 10 483 | 10 517 | 10 551 | 10 585 | 10 619 | 10 653 | 10 687 |
| **128** | 10 721 | 10 755 | 10 789 | 10 823 | 10 857 | 10 890 | 10 924 | 10 958 | 10 992 | 11 025 |
| **129** | 11 059 | 11 093 | 11 126 | 11 160 | 11 193 | 11 227 | 11 261 | 11 294 | 11 327 | 11 361 |
| **130** | 11 394 | 11 428 | 11 461 | 11 494 | 11 528 | 11 561 | 11 594 | 11 628 | 11 661 | 11 694 |
| **131** | 11 727 | 11 760 | 11 793 | 11 826 | 11 860 | 11 893 | 11 926 | 11 959 | 11 992 | 12 024 |
| **132** | 12 057 | 12 090 | 12 123 | 12 156 | 12 189 | 12 222 | 12 254 | 12 287 | 12 320 | 12 352 |
| **133** | 12 385 | 12 418 | 12 450 | 12 483 | 12 516 | 12 548 | 12 581 | 12 613 | 12 646 | 12 678 |
| **134** | 12 710 | 12 743 | 12 775 | 12 808 | 12 840 | 12 872 | 12 905 | 12 937 | 12 969 | 13 001 |
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| **136** | 13 354 | 13 386 | 13 418 | 13 450 | 13 481 | 13 513 | 13 545 | 13 577 | 13 609 | 13 640 |
| **137** | 13 672 | 13 704 | 13 735 | 13 767 | 13 799 | 13 830 | 13 862 | 13 893 | 13 925 | 13 956 |
| **138** | 13 988 | 14 019 | 14 051 | 14 082 | 14 114 | 14 145 | 14 176 | 14 208 | 14 239 | 14 270 |
| **139** | 14 301 | 14 333 | 14 364 | 14 395 | 14 426 | 14 457 | 14 489 | 14 520 | 14 551 | 14 582 |
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| **142** | 15 229 | 15 259 | 15 290 | 15 320 | 15 351 | 15 381 | 15 412 | 15 442 | 15 473 | 15 503 |
| **143** | 15 534 | 15 564 | 15 594 | 15 625 | 15 655 | 15 685 | 15 715 | 15 746 | 15 776 | 15 806 |
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| **145** | 16 137 | 16 167 | 16 197 | 16 227 | 16 256 | 16 286 | 16 316 | 16 346 | 16 376 | 16 406 |
| **146** | 16 435 | 16 465 | 16 495 | 16 524 | 16 554 | 16 584 | 16 613 | 16 643 | 16 673 | 16 702 |
| **147** | 16 732 | 16 761 | 16 791 | 16 820 | 16 850 | 16 879 | 16 909 | 16 938 | 16 967 | 16 997 |
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| **149** | 17 319 | 17 348 | 17 377 | 17 406 | 17 435 | 17 464 | 17 493 | 17 522 | 17 551 | 17 580 |
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| 154 | 18 752 | 18 780 | 18 808 | 18 837 | 18 865 | 18 893 | 18 921 | 18 949 | 18 977 | 19 005 |
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| 156 | 19 312 | 19 340 | 19 368 | 19 396 | 19 424 | 19 451 | 19 479 | 19 507 | 19 535 | 19 562 |
| 157 | 19 590 | 19 618 | 19 645 | 19 673 | 19 700 | 19 728 | 19 756 | 19 783 | 19 811 | 19 838 |
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| 160 | 20 412 | 20 439 | 20 466 | 20 493 | 20 520 | 20 548 | 20 575 | 20 602 | 20 629 | 20 656 |
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| 164 | 21 484 | 21 511 | 21 537 | 21 564 | 21 590 | 21 617 | 21 643 | 21 669 | 21 696 | 21 722 |
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| 167 | 22 272 | 22 298 | 22 324 | 22 350 | 22 376 | 22 401 | 22 427 | 22 453 | 22 479 | 22 505 |
| 168 | 22 531 | 22 557 | 22 583 | 22 608 | 22 634 | 22 660 | 22 686 | 22 712 | 22 737 | 22 763 |
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| 170 | 23 045 | 23 070 | 23 096 | 23 121 | 23 147 | 23 172 | 23 198 | 23 223 | 23 249 | 23 274 |
| 171 | 23 300 | 23 325 | 23 350 | 23 376 | 23 401 | 23 426 | 23 452 | 23 477 | 23 502 | 23 528 |
| 172 | 23 553 | 23 578 | 23 603 | 23 629 | 23 654 | 23 679 | 23 704 | 23 729 | 23 754 | 23 779 |
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| 174 | 24 055 | 24 080 | 24 105 | 24 130 | 24 155 | 24 180 | 24 204 | 24 229 | 24 254 | 24 279 |
| 175 | 24 304 | 24 329 | 24 353 | 24 378 | 24 403 | 24 428 | 24 452 | 24 477 | 24 502 | 24 527 |
| 176 | 24 551 | 24 576 | 24 601 | 24 625 | 24 650 | 24 674 | 24 699 | 24 724 | 24 748 | 24 773 |
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| 179 | 25 285 | 25 310 | 25 334 | 25 358 | 25 382 | 25 406 | 25 431 | 25 455 | 25 479 | 25 503 |
| 180 | 25 527 | 25 551 | 25 575 | 25 600 | 25 624 | 25 648 | 25 672 | 25 696 | 25 720 | 25 744 |
| 181 | 25 768 | 25 792 | 25 816 | 25 840 | 25 864 | 25 888 | 25 912 | 25 935 | 25 959 | 25 983 |
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| 183 | 26 245 | 26 269 | 26 293 | 26 316 | 26 340 | 26 364 | 26 387 | 26 411 | 26 435 | 26 458 |
| 184 | 26 482 | 26 505 | 26 529 | 26 553 | 26 576 | 26 600 | 26 623 | 26 647 | 26 670 | 26 694 |
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| 187 | 27 184 | 27 207 | 27 231 | 27 254 | 27 277 | 27 300 | 27 323 | 27 346 | 27 370 | 27 393 |
| 188 | 27 416 | 27 439 | 27 462 | 27 485 | 27 508 | 27 531 | 27 554 | 27 577 | 27 600 | 27 623 |
| 189 | 27 646 | 27 669 | 27 692 | 27 715 | 27 738 | 27 761 | 27 784 | 27 807 | 27 830 | 27 852 |
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| 192 | 28 330 | 28 353 | 28 375 | 28 398 | 28 421 | 28 443 | 28 466 | 28 488 | 28 511 | 28 533 |
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| 196 | 29 226 | 29 248 | 29 270 | 29 292 | 29 314 | 29 336 | 29 358 | 29 380 | 29 403 | 29 425 |
| 197 | 29 447 | 29 469 | 29 491 | 29 513 | 29 535 | 29 557 | 29 579 | 29 601 | 29 623 | 29 645 |
| 198 | 29 667 | 29 688 | 29 710 | 29 732 | 29 754 | 29 776 | 29 798 | 29 820 | 29 842 | 29 863 |
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| 202 | 30 535 | 30 557 | 30 578 | 30 600 | 30 621 | 30 643 | 30 664 | 30 685 | 30 707 | 30 728 |
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| 204 | 30 963 | 30 984 | 31 006 | 31 027 | 31 048 | 31 069 | 31 091 | 31 112 | 31 133 | 31 154 |
| **205** | 31 175 | 31 197 | 31 218 | 31 239 | 31 260 | 31 281 | 31 302 | 31 323 | 31 345 | 31 366 |
| 206 | 31 387 | 31 408 | 31 429 | 31 450 | 31 471 | 31 492 | 31 513 | 31 534 | 31 555 | 31 576 |
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| 209 | 32 015 | 32 035 | 32 056 | 32 077 | 32 098 | 32 118 | 32 139 | 32 160 | 32 181 | 32 201 |
| **210** | 32 222 | 32 243 | 32 263 | 32 284 | 32 305 | 32 325 | 32 346 | 32 366 | 32 387 | 32 408 |
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| 214 | 33 041 | 33 062 | 33 082 | 33 102 | 33 122 | 33 143 | 33 163 | 33 183 | 33 203 | 33 224 |
| **215** | 33 244 | 33 264 | 33 284 | 33 304 | 33 325 | 33 345 | 33 365 | 33 385 | 33 405 | 33 425 |
| 216 | 33 445 | 33 465 | 33 486 | 33 506 | 33 526 | 33 546 | 33 566 | 33 586 | 33 606 | 33 626 |
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| 232 | 36 549 | 36 568 | 36 586 | 36 605 | 36 624 | 36 642 | 36 661 | 36 680 | 36 698 | 36 717 |
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| 234 | 36 922 | 36 940 | 36 959 | 36 977 | 36 996 | 37 014 | 37 033 | 37 051 | 37 070 | 37 088 |
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| 242 | 38 382 | 38 399 | 38 417 | 38 435 | 38 453 | 38 471 | 38 489 | 38 507 | 38 525 | 38 543 |
| 243 | 38 561 | 38 578 | 38 596 | 38 614 | 38 632 | 38 650 | 38 668 | 38 686 | 38 703 | 38 721 |
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| **245** | 38 917 | 38 934 | 38 952 | 38 970 | 38 987 | 39 005 | 39 023 | 39 041 | 39 058 | 39 076 |
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| 247 | 39 270 | 39 287 | 39 305 | 39 322 | 39 340 | 39 358 | 39 375 | 39 393 | 39 410 | 39 428 |
| 248 | 39 445 | 39 463 | 39 480 | 39 498 | 39 515 | 39 533 | 39 550 | 39 568 | 39 585 | 39 602 |
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| 258 | 41 162 | 41 179 | 41 196 | 41 212 | 41 229 | 41 246 | 41 263 | 41 280 | 41 296 | 41 313 |
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| 292 | 46 538 | 46 553 | 46 568 | 46 583 | 46 598 | 46 613 | 46 627 | 46 642 | 46 657 | 46 672 |
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| 294 | 46 835 | 46 850 | 46 864 | 46 879 | 46 894 | 46 909 | 46 923 | 46 938 | 46 953 | 46 967 |
| **295** | 46 982 | 46 997 | 47 012 | 47 026 | 47 041 | 47 056 | 47 070 | 47 085 | 47 100 | 47 114 |
| 296 | 47 129 | 47 144 | 47 159 | 47 173 | 47 188 | 47 202 | 47 217 | 47 232 | 47 246 | 47 261 |
| 297 | 47 276 | 47 290 | 47 305 | 47 319 | 47 334 | 47 349 | 47 363 | 47 378 | 47 392 | 47 407 |
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| **300** | 47 712 | 47 727 | 47 741 | 47 756 | 47 770 | 47 784 | 47 799 | 47 813 | 47 828 | 47 842 |
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| 304 | 48 287 | 48 302 | 48 316 | 48 330 | 48 344 | 48 359 | 48 373 | 48 387 | 48 401 | 48 416 |
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| 317 | 50 106 | 50 120 | 50 133 | 50 147 | 50 161 | 50 174 | 50 188 | 50 202 | 50 215 | 50 229 |
| 318 | 50 243 | 50 256 | 50 270 | 50 284 | 50 297 | 50 311 | 50 325 | 50 338 | 50 352 | 50 365 |
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| **330** | 51 851 | 51 865 | 51 878 | 51 891 | 51 904 | 51 917 | 51 930 | 51 943 | 51 957 | 51 970 |
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| 333 | 52 244 | 52 257 | 52 270 | 52 284 | 52 297 | 52 310 | 52 323 | 52 336 | 52 349 | 52 362 |
| 334 | 52 375 | 52 388 | 52 401 | 52 414 | 52 427 | 52 440 | 52 453 | 52 466 | 52 479 | 52 492 |
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| **N** | **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** |

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| 382 | 58 206 | 58 218 | 58 229 | 58 240 | 58 252 | 58 263 | 58 274 | 58 286 | 58 297 | 58 309 |
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| **409** | 61 172 | 61 183 | 61 194 | 61 204 | 61 215 | 61 225 | 61 236 | 61 247 | 61 257 | 61 268 |
| **410** | 61 278 | 61 289 | 61 300 | 61 310 | 61 321 | 61 331 | 61 342 | 61 352 | 61 363 | 61 374 |
| **411** | 61 384 | 61 395 | 61 405 | 61 416 | 61 426 | 61 437 | 61 448 | 61 458 | 61 469 | 61 479 |
| **412** | 61 490 | 61 500 | 61 511 | 61 521 | 61 532 | 61 542 | 61 553 | 61 563 | 61 574 | 61 584 |
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| **420** | 62 325 | 62 335 | 62 346 | 62 356 | 62 366 | 62 377 | 62 387 | 62 397 | 62 408 | 62 418 |
| **421** | 62 428 | 62 439 | 62 449 | 62 459 | 62 469 | 62 480 | 62 490 | 62 500 | 62 511 | 62 521 |
| **422** | 62 531 | 62 542 | 62 552 | 62 562 | 62 572 | 62 583 | 62 593 | 62 603 | 62 613 | 62 624 |
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| **426** | 62 941 | 62 951 | 62 961 | 62 972 | 62 982 | 62 992 | 63 002 | 63 012 | 63 022 | 63 033 |
| **427** | 63 043 | 63 053 | 63 063 | 63 073 | 63 083 | 63 094 | 63 104 | 63 114 | 63 124 | 63 134 |
| **428** | 63 144 | 63 155 | 63 165 | 63 175 | 63 185 | 63 195 | 63 205 | 63 215 | 63 225 | 63 236 |
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| **430** | 63 347 | 63 357 | 63 367 | 63 377 | 63 387 | 63 397 | 63 407 | 63 417 | 63 428 | 63 438 |
| **431** | 63 448 | 63 458 | 63 468 | 63 478 | 63 488 | 63 498 | 63 508 | 63 518 | 63 528 | 63 538 |
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| **438** | 64 147 | 64 157 | 64 167 | 64 177 | 64 187 | 64 197 | 64 207 | 64 217 | 64 227 | 64 237 |
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| **447** | 65 031 | 65 040 | 65 050 | 65 060 | 65 070 | 65 079 | 65 089 | 65 099 | 65 108 | 65 118 |
| **448** | 65 128 | 65 137 | 65 147 | 65 157 | 65 167 | 65 176 | 65 186 | 65 196 | 65 205 | 65 215 |
| **449** | 65 225 | 65 234 | 65 244 | 65 254 | 65 263 | 65 273 | 65 283 | 65 292 | 65 302 | 65 312 |
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| 486 | 68 664 | 68 673 | 68 681 | 68 690 | 68 699 | 68 708 | 68 717 | 68 726 | 68 735 | 68 744 |
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| 492 | 69 197 | 69 205 | 69 214 | 69 223 | 69 232 | 69 241 | 69 249 | 69 258 | 69 267 | 69 276 |
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| 494 | 69 373 | 69 381 | 69 390 | 69 399 | 69 408 | 69 417 | 69 425 | 69 434 | 69 443 | 69 452 |
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| 496 | 69 548 | 69 557 | 69 566 | 69 574 | 69 583 | 69 592 | 69 601 | 69 609 | 69 618 | 69 627 |
| 497 | 69 636 | 69 644 | 69 653 | 69 662 | 69 671 | 69 679 | 69 688 | 69 697 | 69 705 | 69 714 |
| 498 | 69 723 | 69 732 | 69 740 | 69 749 | 69 758 | 69 767 | 69 775 | 69 784 | 69 793 | 69 801 |
| 499 | 69 810 | 69 819 | 69 827 | 69 836 | 69 845 | 69 854 | 69 862 | 69 871 | 69 880 | 69 888 |
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| 500 | 69 897 | 69 906 | 69 914 | 69 923 | 69 932 | 69 940 | 69 949 | 69 958 | 69 966 | 69 975 |
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| 503 | 70 157 | 70 165 | 70 174 | 70 183 | 70 191 | 70 200 | 70 209 | 70 217 | 70 226 | 70 234 |
| 504 | 70 243 | 70 252 | 70 260 | 70 269 | 70 278 | 70 286 | 70 295 | 70 303 | 70 312 | 70 321 |
| 505 | 70 329 | 70 338 | 70 346 | 70 355 | 70 364 | 70 372 | 70 381 | 70 389 | 70 398 | 70 406 |
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| 511 | 70 842 | 70 851 | 70 859 | 70 868 | 70 876 | 70 885 | 70 893 | 70 902 | 70 910 | 70 919 |
| 512 | 70 927 | 70 935 | 70 944 | 70 952 | 70 961 | 70 969 | 70 978 | 70 986 | 70 995 | 71 003 |
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| 515 | 71 181 | 71 189 | 71 198 | 71 206 | 71 214 | 71 223 | 71 231 | 71 240 | 71 248 | 71 257 |
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| 517 | 71 349 | 71 357 | 71 366 | 71 374 | 71 383 | 71 391 | 71 399 | 71 408 | 71 416 | 71 425 |
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| 520 | 71 600 | 71 609 | 71 617 | 71 625 | 71 634 | 71 642 | 71 650 | 71 659 | 71 667 | 71 675 |
| 521 | 71 684 | 71 692 | 71 700 | 71 709 | 71 717 | 71 725 | 71 734 | 71 742 | 71 750 | 71 759 |
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| 526 | 72 099 | 72 107 | 72 115 | 72 123 | 72 132 | 72 140 | 72 148 | 72 156 | 72 165 | 72 173 |
| 527 | 72 181 | 72 189 | 72 198 | 72 206 | 72 214 | 72 222 | 72 230 | 72 239 | 72 247 | 72 255 |
| 528 | 72 263 | 72 272 | 72 280 | 72 288 | 72 296 | 72 304 | 72 313 | 72 321 | 72 329 | 72 337 |
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| 531 | 72 509 | 72 518 | 72 526 | 72 534 | 72 542 | 72 550 | 72 558 | 72 567 | 72 575 | 72 583 |
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| 534 | 72 754 | 72 762 | 72 770 | 72 779 | 72 787 | 72 795 | 72 803 | 72 811 | 72 819 | 72 827 |
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| 538 | 73 078 | 73 086 | 73 094 | 73 102 | 73 111 | 73 119 | 73 127 | 73 135 | 73 143 | 73 151 |
| 539 | 73 159 | 73 167 | 73 175 | 73 183 | 73 191 | 73 199 | 73 207 | 73 215 | 73 223 | 73 231 |
| 540 | 73 239 | 73 247 | 73 255 | 73 263 | 73 272 | 73 280 | 73 288 | 73 296 | 73 304 | 73 312 |
| 541 | 73 320 | 73 328 | 73 336 | 73 344 | 73 352 | 73 360 | 73 368 | 73 376 | 73 384 | 73 392 |
| 542 | 73 400 | 73 408 | 73 416 | 73 424 | 73 432 | 73 440 | 73 448 | 73 456 | 73 464 | 73 472 |
| 543 | 73 480 | 73 488 | 73 496 | 73 504 | 73 512 | 73 520 | 73 528 | 73 536 | 73 544 | 73 552 |
| 544 | 73 560 | 73 568 | 73 576 | 73 584 | 73 592 | 73 600 | 73 608 | 73 616 | 73 624 | 73 632 |
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| 546 | 73 719 | 73 727 | 73 735 | 73 743 | 73 751 | 73 759 | 73 767 | 73 775 | 73 783 | 73 791 |
| 547 | 73 799 | 73 807 | 73 815 | 73 823 | 73 830 | 73 838 | 73 846 | 73 854 | 73 862 | 73 870 |
| 548 | 73 878 | 73 886 | 73 894 | 73 902 | 73 910 | 73 918 | 73 926 | 73 933 | 73 941 | 73 949 |
| 549 | 73 957 | 73 965 | 73 973 | 73 981 | 73 989 | 73 997 | 74 005 | 74 013 | 74 020 | 74 028 |
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| **550** | 74 036 | 74 044 | 74 052 | 74 060 | 74 068 | 74 076 | 74 084 | 74 092 | 74 099 | 74 107 |
| 551 | 74 115 | 74 123 | 74 131 | 74 139 | 74 147 | 74 155 | 74 162 | 74 170 | 74 178 | 74 186 |
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| 553 | 74 273 | 74 280 | 74 288 | 74 296 | 74 304 | 74 312 | 74 320 | 74 327 | 74 335 | 74 343 |
| 554 | 74 351 | 74 359 | 74 367 | 74 374 | 74 382 | 74 390 | 74 398 | 74 406 | 74 414 | 74 421 |
| 555 | 74 429 | 74 437 | 74 445 | 74 453 | 74 461 | 74 468 | 74 476 | 74 484 | 74 492 | 74 500 |
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| 558 | 74 663 | 74 671 | 74 679 | 74 687 | 74 695 | 74 702 | 74 710 | 74 718 | 74 726 | 74 733 |
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| **560** | 74 819 | 74 827 | 74 834 | 74 842 | 74 850 | 74 858 | 74 865 | 74 873 | 74 881 | 74 889 |
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| 562 | 74 974 | 74 981 | 74 989 | 74 997 | 75 005 | 75 012 | 75 020 | 75 028 | 75 035 | 75 043 |
| 563 | 75 051 | 75 059 | 75 066 | 75 074 | 75 082 | 75 089 | 75 097 | 75 105 | 75 113 | 75 120 |
| 564 | 75 128 | 75 136 | 75 143 | 75 151 | 75 159 | 75 166 | 75 174 | 75 182 | 75 189 | 75 197 |
| 565 | 75 205 | 75 213 | 75 220 | 75 228 | 75 236 | 75 243 | 75 251 | 75 259 | 75 266 | 75 274 |
| 566 | 75 282 | 75 289 | 75 297 | 75 305 | 75 312 | 75 320 | 75 328 | 75 335 | 75 343 | 75 351 |
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| **570** | 75 587 | 75 595 | 75 603 | 75 610 | 75 618 | 75 626 | 75 633 | 75 641 | 75 648 | 75 656 |
| 571 | 75 664 | 75 671 | 75 679 | 75 686 | 75 694 | 75 702 | 75 709 | 75 717 | 75 724 | 75 732 |
| 572 | 75 740 | 75 747 | 75 755 | 75 762 | 75 770 | 75 778 | 75 785 | 75 793 | 75 800 | 75 808 |
| 573 | 75 815 | 75 823 | 75 831 | 75 838 | 75 846 | 75 853 | 75 861 | 75 868 | 75 876 | 75 884 |
| 574 | 75 891 | 75 899 | 75 906 | 75 914 | 75 921 | 75 929 | 75 937 | 75 944 | 75 952 | 75 959 |
| 575 | 75 967 | 75 974 | 75 982 | 75 989 | 75 997 | 76 005 | 76 012 | 76 020 | 76 027 | 76 035 |
| 576 | 76 042 | 76 050 | 76 057 | 76 065 | 76 072 | 76 080 | 76 087 | 76 095 | 76 103 | 76 110 |
| 577 | 76 118 | 76 125 | 76 133 | 76 140 | 76 148 | 76 155 | 76 163 | 76 170 | 76 178 | 76 185 |
| 578 | 76 193 | 76 200 | 76 208 | 76 215 | 76 223 | 76 230 | 76 238 | 76 245 | 76 253 | 76 260 |
| 579 | 76 268 | 76 275 | 76 283 | 76 290 | 76 298 | 76 305 | 76 313 | 76 320 | 76 328 | 76 335 |
| **580** | 76 343 | 76 350 | 76 358 | 76 365 | 76 373 | 76 380 | 76 388 | 76 395 | 76 403 | 76 410 |
| 581 | 76 418 | 76 425 | 76 433 | 76 440 | 76 448 | 76 455 | 76 462 | 76 470 | 76 477 | 76 485 |
| 582 | 76 492 | 76 500 | 76 507 | 76 515 | 76 522 | 76 530 | 76 537 | 76 545 | 76 552 | 76 559 |
| 583 | 76 567 | 76 574 | 76 582 | 76 589 | 76 597 | 76 604 | 76 612 | 76 619 | 76 626 | 76 634 |
| 584 | 76 641 | 76 649 | 76 656 | 76 664 | 76 671 | 76 678 | 76 686 | 76 693 | 76 701 | 76 708 |
| 585 | 76 716 | 76 723 | 76 730 | 76 738 | 76 745 | 76 753 | 76 760 | 76 768 | 76 775 | 76 782 |
| 586 | 76 790 | 76 797 | 76 805 | 76 812 | 76 819 | 76 827 | 76 834 | 76 842 | 76 849 | 76 856 |
| 587 | 76 864 | 76 871 | 76 879 | 76 886 | 76 893 | 76 901 | 76 908 | 76 916 | 76 923 | 76 930 |
| 588 | 76 938 | 76 945 | 76 953 | 76 960 | 76 967 | 76 975 | 76 982 | 76 989 | 76 997 | 77 004 |
| 589 | 77 012 | 77 019 | 77 026 | 77 034 | 77 041 | 77 048 | 77 056 | 77 063 | 77 070 | 77 078 |
| **590** | 77 085 | 77 093 | 77 100 | 77 107 | 77 115 | 77 122 | 77 129 | 77 137 | 77 144 | 77 151 |
| 591 | 77 159 | 77 166 | 77 173 | 77 181 | 77 188 | 77 195 | 77 203 | 77 210 | 77 217 | 77 225 |
| 592 | 77 232 | 77 240 | 77 247 | 77 254 | 77 262 | 77 269 | 77 276 | 77 283 | 77 291 | 77 298 |
| 593 | 77 305 | 77 313 | 77 320 | 77 327 | 77 335 | 77 342 | 77 349 | 77 357 | 77 364 | 77 371 |
| 594 | 77 379 | 77 386 | 77 393 | 77 401 | 77 408 | 77 415 | 77 422 | 77 430 | 77 437 | 77 444 |
| 595 | 77 452 | 77 459 | 77 466 | 77 474 | 77 481 | 77 488 | 77 495 | 77 503 | 77 510 | 77 517 |
| 596 | 77 525 | 77 532 | 77 539 | 77 546 | 77 554 | 77 561 | 77 568 | 77 576 | 77 583 | 77 590 |
| 597 | 77 597 | 77 605 | 77 612 | 77 619 | 77 627 | 77 634 | 77 641 | 77 648 | 77 656 | 77 663 |
| 598 | 77 670 | 77 677 | 77 685 | 77 692 | 77 699 | 77 706 | 77 714 | 77 721 | 77 728 | 77 735 |
| 599 | 77 743 | 77 750 | 77 757 | 77 764 | 77 772 | 77 779 | 77 786 | 77 793 | 77 801 | 77 808 |
| **600** | 77 815 | 77 822 | 77 830 | 77 837 | 77 844 | 77 851 | 77 859 | 77 866 | 77 873 | 77 880 |
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| **602** | 77 960 | 77 967 | 77 974 | 77 981 | 77 988 | 77 996 | 78 003 | 78 010 | 78 017 | 78 025 |
| **603** | 78 032 | 78 039 | 78 046 | 78 053 | 78 061 | 78 068 | 78 075 | 78 082 | 78 089 | 78 097 |
| **604** | 78 104 | 78 111 | 78 118 | 78 125 | 78 132 | 78 140 | 78 147 | 78 154 | 78 161 | 78 168 |
| **605** | 78 176 | 78 183 | 78 190 | 78 197 | 78 204 | 78 211 | 78 219 | 78 226 | 78 233 | 78 240 |
| **606** | 73 247 | 78 254 | 78 262 | 78 269 | 78 276 | 78 283 | 78 290 | 78 297 | 78 305 | 78 312 |
| **607** | 78 319 | 78 326 | 78 333 | 78 340 | 78 347 | 78 355 | 78 362 | 78 369 | 78 376 | 78 383 |
| **608** | 78 390 | 78 398 | 78 405 | 78 412 | 78 419 | 78 426 | 78 433 | 78 440 | 78 447 | 78 455 |
| **609** | 78 462 | 78 469 | 78 476 | 78 483 | 78 490 | 78 497 | 78 504 | 78 512 | 78 519 | 78 526 |
| **610** | 78 533 | 78 540 | 78 547 | 78 554 | 78 561 | 78 569 | 78 576 | 78 583 | 78 590 | 78 597 |
| **611** | 78 604 | 78 611 | 78 618 | 78 625 | 78 633 | 78 640 | 78 647 | 78 654 | 78 661 | 78 668 |
| **612** | 78 675 | 78 682 | 78 689 | 78 696 | 78 704 | 78 711 | 78 718 | 78 725 | 78 732 | 78 739 |
| **613** | 78 746 | 78 753 | 78 760 | 78 767 | 78 774 | 78 781 | 78 789 | 78 796 | 78 803 | 78 810 |
| **614** | 78 817 | 78 824 | 78 831 | 78 838 | 78 845 | 78 852 | 78 859 | 78 866 | 78 873 | 78 880 |
| **615** | 78 888 | 78 895 | 78 902 | 78 909 | 78 916 | 78 923 | 78 930 | 78 937 | 78 944 | 78 951 |
| **616** | 78 958 | 78 965 | 78 972 | 78 979 | 78 986 | 78 993 | 79 000 | 79 007 | 79 014 | 79 021 |
| **617** | 79 029 | 79 036 | 79 043 | 79 050 | 79 057 | 79 064 | 79 071 | 79 078 | 79 085 | 79 092 |
| **618** | 79 099 | 79 106 | 79 113 | 79 120 | 79 127 | 79 134 | 79 141 | 79 148 | 79 155 | 79 162 |
| **619** | 79 169 | 79 176 | 79 183 | 79 190 | 79 197 | 79 204 | 79 211 | 79 218 | 79 225 | 79 232 |
| **620** | 79 239 | 79 246 | 79 253 | 79 260 | 79 267 | 79 274 | 79 281 | 79 288 | 79 295 | 79 302 |
| **621** | 79 309 | 79 316 | 79 323 | 79 330 | 79 337 | 79 344 | 79 351 | 79 358 | 79 365 | 79 372 |
| **622** | 79 379 | 79 386 | 79 393 | 79 400 | 79 407 | 79 414 | 79 421 | 79 428 | 79 435 | 79 442 |
| **623** | 79 449 | 79 456 | 79 463 | 79 470 | 79 477 | 79 484 | 79 491 | 79 498 | 79 505 | 79 511 |
| **624** | 79 518 | 79 525 | 79 532 | 79 539 | 79 546 | 79 553 | 79 560 | 79 567 | 79 574 | 79 581 |
| **625** | 79 588 | 79 595 | 79 602 | 79 609 | 79 616 | 79 623 | 79 630 | 79 637 | 79 644 | 79 650 |
| **626** | 79 657 | 79 664 | 79 671 | 79 678 | 79 685 | 79 692 | 79 699 | 79 706 | 79 713 | 79 720 |
| **627** | 79 727 | 79 734 | 79 741 | 79 748 | 79 754 | 79 761 | 79 768 | 79 775 | 79 782 | 79 789 |
| **628** | 79 796 | 79 803 | 79 810 | 79 817 | 79 824 | 79 831 | 79 837 | 79 844 | 79 851 | 79 858 |
| **629** | 79 865 | 79 872 | 79 879 | 79 886 | 79 893 | 79 900 | 79 906 | 79 913 | 79 920 | 79 927 |
| **630** | 79 934 | 79 941 | 79 948 | 79 955 | 79 962 | 79 969 | 79 975 | 79 982 | 79 989 | 79 996 |
| **631** | 80 003 | 80 010 | 80 017 | 80 024 | 80 030 | 80 037 | 80 044 | 80 051 | 80 058 | 80 065 |
| **632** | 80 072 | 80 079 | 80 085 | 80 092 | 80 099 | 80 106 | 80 113 | 80 120 | 80 127 | 80 134 |
| **633** | 80 140 | 80 147 | 80 154 | 80 161 | 80 168 | 80 175 | 80 182 | 80 188 | 80 195 | 80 202 |
| **634** | 80 209 | 80 216 | 80 223 | 80 229 | 80 236 | 80 243 | 80 250 | 80 257 | 80 264 | 80 271 |
| **635** | 80 277 | 80 284 | 80 291 | 80 298 | 80 305 | 80 312 | 80 318 | 80 325 | 80 332 | 80 339 |
| **636** | 80 346 | 80 353 | 80 359 | 80 366 | 80 373 | 80 380 | 80 387 | 80 393 | 80 400 | 80 407 |
| **637** | 80 414 | 80 421 | 80 428 | 80 434 | 80 441 | 80 448 | 80 455 | 80 462 | 80 468 | 80 475 |
| **638** | 80 482 | 80 489 | 80 496 | 80 502 | 80 509 | 80 516 | 80 523 | 80 530 | 80 536 | 80 543 |
| **639** | 80 550 | 80 557 | 80 564 | 80 570 | 80 577 | 80 584 | 80 591 | 80 598 | 80 604 | 80 611 |
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| **641** | 80 686 | 80 693 | 80 699 | 80 706 | 80 713 | 80 720 | 80 726 | 80 733 | 80 740 | 80 747 |
| **642** | 80 754 | 80 760 | 80 767 | 80 774 | 80 781 | 80 787 | 80 794 | 80 801 | 80 808 | 80 814 |
| **643** | 80 821 | 80 828 | 80 835 | 80 841 | 80 848 | 80 855 | 80 862 | 80 868 | 80 875 | 80 882 |
| **644** | 80 889 | 80 895 | 80 902 | 80 909 | 80 916 | 80 922 | 80 929 | 80 936 | 80 943 | 80 949 |
| **645** | 80 956 | 80 963 | 80 969 | 80 976 | 80 983 | 80 990 | 80 996 | 81 003 | 81 010 | 81 017 |
| **646** | 81 023 | 81 030 | 81 037 | 81 043 | 81 050 | 81 057 | 81 064 | 81 070 | 81 077 | 81 084 |
| **647** | 81 090 | 81 097 | 81 104 | 81 111 | 81 117 | 81 124 | 81 131 | 81 137 | 81 144 | 81 151 |
| **648** | 81 158 | 81 164 | 81 171 | 81 178 | 81 184 | 81 191 | 81 198 | 81 204 | 81 211 | 81 218 |
| **649** | 81 224 | 81 231 | 81 238 | 81 245 | 81 251 | 81 258 | 81 265 | 81 271 | 81 278 | 81 285 |
| **650** | 81 291 | 81 298 | 81 305 | 81 311 | 81 318 | 81 325 | 81 331 | 81 338 | 81 345 | 81 351 |
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| **660** | 81 954 | 81 961 | 81 968 | 81 974 | 81 981 | 81 987 | 81 994 | 82 000 | 82 007 | 82 014 |
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| 662 | 82 086 | 82 092 | 82 099 | 82 105 | 82 112 | 82 119 | 82 125 | 82 132 | 82 138 | 82 145 |
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| 672 | 82 737 | 82 743 | 82 750 | 82 756 | 82 763 | 82 769 | 82 776 | 82 782 | 82 789 | 82 795 |
| 673 | 82 802 | 82 808 | 82 814 | 82 821 | 82 827 | 82 834 | 82 840 | 82 847 | 82 853 | 82 860 |
| 674 | 82 866 | 82 872 | 82 879 | 82 885 | 82 892 | 82 898 | 82 905 | 82 911 | 82 918 | 82 924 |
| 675 | 82 930 | 82 937 | 82 943 | 82 950 | 82 956 | 82 963 | 82 969 | 82 975 | 82 982 | 82 988 |
| 676 | 82 995 | 83 001 | 83 008 | 83 014 | 83 020 | 83 027 | 83 033 | 83 040 | 83 046 | 83 052 |
| 677 | 83 059 | 83 065 | 83 072 | 83 078 | 83 085 | 83 091 | 83 097 | 83 104 | 83 110 | 83 117 |
| 678 | 83 123 | 83 129 | 83 136 | 83 142 | 83 149 | 83 155 | 83 161 | 83 168 | 83 174 | 83 181 |
| 679 | 83 187 | 83 193 | 83 200 | 83 206 | 83 213 | 83 219 | 83 225 | 83 232 | 83 238 | 83 245 |
| **680** | 83 251 | 83 257 | 83 264 | 83 270 | 83 276 | 83 283 | 83 289 | 83 296 | 83 302 | 83 308 |
| 681 | 83 315 | 83 321 | 83 327 | 83 334 | 83 340 | 83 347 | 83 353 | 83 359 | 83 366 | 83 372 |
| 682 | 83 378 | 83 385 | 83 391 | 83 398 | 83 404 | 83 410 | 83 417 | 83 423 | 83 429 | 83 436 |
| 683 | 83 442 | 83 448 | 83 455 | 83 461 | 83 467 | 83 474 | 83 480 | 83 487 | 83 493 | 83 499 |
| 684 | 83 506 | 83 512 | 83 518 | 83 525 | 83 531 | 83 537 | 83 544 | 83 550 | 83 556 | 83 563 |
| 685 | 83 569 | 83 575 | 83 582 | 83 588 | 83 594 | 83 601 | 83 607 | 83 613 | 83 620 | 83 626 |
| 686 | 83 632 | 83 639 | 83 645 | 83 651 | 83 658 | 83 664 | 83 670 | 83 677 | 83 683 | 83 689 |
| 687 | 83 696 | 83 702 | 83 708 | 83 715 | 83 721 | 83 727 | 83 734 | 83 740 | 83 746 | 83 753 |
| 688 | 83 759 | 83 765 | 83 771 | 83 778 | 83 784 | 83 790 | 83 797 | 83 803 | 83 809 | 83 816 |
| 689 | 83 822 | 83 828 | 83 835 | 83 841 | 83 847 | 83 853 | 83 860 | 83 866 | 83 872 | 83 879 |
| **690** | 83 885 | 83 891 | 83 897 | 83 904 | 83 910 | 83 916 | 83 923 | 83 929 | 83 935 | 83 942 |
| 691 | 83 948 | 83 954 | 83 960 | 83 967 | 83 973 | 83 979 | 83 985 | 83 992 | 83 998 | 84 004 |
| 692 | 84 011 | 84 017 | 84 023 | 84 029 | 84 036 | 84 042 | 84 048 | 84 055 | 84 061 | 84 067 |
| 693 | 84 073 | 84 080 | 84 086 | 84 092 | 84 098 | 84 105 | 84 111 | 84 117 | 84 123 | 84 130 |
| 694 | 84 136 | 84 142 | 84 148 | 84 155 | 84 161 | 84 167 | 84 173 | 84 180 | 84 186 | 84 192 |
| 695 | 84 198 | 84 205 | 84 211 | 84 217 | 84 223 | 84 230 | 84 236 | 84 242 | 84 248 | 84 255 |
| 696 | 84 261 | 84 267 | 84 273 | 84 280 | 84 286 | 84 292 | 84 298 | 84 305 | 84 311 | 84 317 |
| 697 | 84 323 | 84 330 | 84 336 | 84 342 | 84 348 | 84 354 | 84 361 | 84 367 | 84 373 | 84 379 |
| 698 | 84 386 | 84 392 | 84 398 | 84 404 | 84 410 | 84 417 | 84 423 | 84 429 | 84 435 | 84 442 |
| 699 | 84 448 | 84 454 | 84 460 | 84 466 | 84 473 | 84 479 | 84 485 | 84 491 | 84 497 | 84 504 |
| **700** | 84 510 | 84 516 | 84 522 | 84 528 | 84 535 | 84 541 | 84 547 | 84 553 | 84 559 | 84 566 |
| **N** | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

| N | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 84 510 | 84 516 | 84 522 | 84 528 | 84 535 | 84 541 | 84 547 | 84 553 | 84 559 | 84 566 |
| 701 | 84 572 | 84 578 | 84 584 | 84 590 | 84 597 | 84 603 | 84 609 | 84 615 | 84 621 | 84 628 |
| 702 | 84 634 | 84 640 | 84 646 | 84 652 | 84 658 | 84 665 | 84 671 | 84 677 | 84 683 | 84 689 |
| 703 | 84 696 | 84 702 | 84 708 | 84 714 | 84 720 | 84 726 | 84 733 | 84 739 | 84 745 | 84 751 |
| 704 | 84 757 | 84 763 | 84 770 | 84 776 | 84 782 | 84 788 | 84 794 | 84 800 | 84 807 | 84 813 |
| 705 | 84 819 | 84 825 | 84 831 | 84 837 | 84 844 | 84 850 | 84 856 | 84 862 | 84 868 | 84 874 |
| 706 | 84 880 | 84 887 | 84 893 | 84 899 | 84 905 | 84 911 | 84 917 | 84 924 | 84 930 | 84 936 |
| 707 | 84 942 | 84 948 | 84 954 | 84 960 | 84 967 | 84 973 | 84 979 | 84 985 | 84 991 | 84 997 |
| 708 | 85 003 | 85 009 | 85 016 | 85 022 | 85 028 | 85 034 | 85 040 | 85 046 | 85 052 | 85 058 |
| 709 | 85 065 | 85 071 | 85 077 | 85 083 | 85 089 | 85 095 | 85 101 | 85 107 | 85 114 | 85 120 |
| 710 | 85 126 | 85 132 | 85 138 | 85 144 | 85 150 | 85 156 | 85 163 | 85 169 | 85 175 | 85 181 |
| 711 | 85 187 | 85 193 | 85 199 | 85 205 | 85 211 | 85 217 | 85 224 | 85 230 | 85 236 | 85 242 |
| 712 | 85 248 | 85 254 | 85 260 | 85 266 | 85 272 | 85 278 | 85 285 | 85 291 | 85 297 | 85 303 |
| 713 | 85 309 | 85 315 | 85 321 | 85 327 | 85 333 | 85 339 | 85 345 | 85 352 | 85 358 | 85 364 |
| 714 | 85 370 | 85 376 | 85 382 | 85 388 | 85 394 | 85 400 | 85 406 | 85 412 | 85 418 | 85 425 |
| 715 | 85 431 | 85 437 | 85 443 | 85 449 | 85 455 | 85 461 | 85 467 | 85 473 | 85 479 | 85 485 |
| 716 | 85 491 | 85 497 | 85 503 | 85 509 | 85 516 | 85 522 | 85 528 | 85 534 | 85 540 | 85 546 |
| 717 | 85 552 | 85 558 | 85 564 | 85 570 | 85 576 | 85 582 | 85 588 | 85 594 | 85 600 | 85 606 |
| 718 | 85 612 | 85 618 | 85 625 | 85 631 | 85 637 | 85 643 | 85 649 | 85 655 | 85 661 | 85 667 |
| 719 | 85 673 | 85 679 | 85 685 | 85 691 | 85 697 | 85 703 | 85 709 | 85 715 | 85 721 | 85 727 |
| 720 | 85 733 | 85 739 | 85 745 | 85 751 | 85 757 | 85 763 | 85 769 | 85 775 | 85 781 | 85 788 |
| 721 | 85 794 | 85 800 | 85 806 | 85 812 | 85 818 | 85 824 | 85 830 | 85 836 | 85 842 | 85 848 |
| 722 | 85 854 | 85 860 | 85 866 | 85 872 | 85 878 | 85 884 | 85 890 | 85 896 | 85 902 | 85 908 |
| 723 | 85 914 | 85 920 | 85 926 | 85 932 | 85 938 | 85 944 | 85 950 | 85 956 | 85 962 | 85 968 |
| 724 | 85 974 | 85 980 | 85 986 | 85 992 | 85 998 | 86 004 | 86 010 | 86 016 | 86 022 | 86 028 |
| 725 | 86 034 | 86 040 | 86 046 | 86 052 | 86 058 | 86 064 | 86 070 | 86 076 | 86 082 | 86 088 |
| 726 | 86 094 | 86 100 | 86 106 | 86 112 | 86 118 | 86 124 | 86 130 | 86 136 | 86 141 | 86 147 |
| 727 | 86 153 | 86 159 | 86 165 | 86 171 | 86 177 | 86 183 | 86 189 | 86 195 | 86 201 | 86 207 |
| 728 | 86 213 | 86 219 | 86 225 | 86 231 | 86 237 | 86 243 | 86 249 | 86 255 | 86 261 | 86 267 |
| 729 | 86 273 | 86 279 | 86 285 | 86 291 | 86 297 | 86 303 | 86 308 | 86 314 | 86 320 | 86 326 |
| 730 | 86 332 | 86 338 | 86 344 | 86 350 | 86 356 | 86 362 | 86 368 | 86 374 | 86 380 | 86 386 |
| 731 | 86 392 | 86 398 | 86 404 | 86 410 | 86 415 | 86 421 | 86 427 | 86 433 | 86 439 | 86 445 |
| 732 | 86 451 | 86 457 | 86 463 | 86 469 | 86 475 | 86 481 | 86 487 | 86 493 | 86 499 | 86 504 |
| 733 | 86 510 | 86 516 | 86 522 | 86 528 | 86 534 | 86 540 | 86 546 | 86 552 | 86 558 | 86 564 |
| 734 | 86 570 | 86 576 | 86 581 | 86 587 | 86 593 | 86 599 | 86 605 | 86 611 | 86 617 | 86 623 |
| 735 | 86 629 | 86 635 | 86 641 | 86 646 | 86 652 | 86 658 | 86 664 | 86 670 | 86 676 | 86 682 |
| 736 | 86 688 | 86 694 | 86 700 | 86 705 | 86 711 | 86 717 | 86 723 | 86 729 | 86 735 | 86 741 |
| 737 | 86 747 | 86 753 | 86 759 | 86 764 | 86 770 | 86 776 | 86 782 | 86 788 | 86 794 | 86 800 |
| 738 | 86 806 | 86 812 | 86 817 | 86 823 | 86 829 | 86 835 | 86 841 | 86 847 | 86 853 | 86 859 |
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| 741 | 86 982 | 86 988 | 86 994 | 86 999 | 87 005 | 87 011 | 87 017 | 87 023 | 87 029 | 87 035 |
| 742 | 87 040 | 87 046 | 87 052 | 87 058 | 87 064 | 87 070 | 87 075 | 87 081 | 87 087 | 87 093 |
| 743 | 87 099 | 87 105 | 87 111 | 87 116 | 87 122 | 87 128 | 87 134 | 87 140 | 87 146 | 87 151 |
| 744 | 87 157 | 87 163 | 87 169 | 87 175 | 87 181 | 87 186 | 87 192 | 87 198 | 87 204 | 87 210 |
| 745 | 87 216 | 87 221 | 87 227 | 87 233 | 87 239 | 87 245 | 87 251 | 87 256 | 87 262 | 87 268 |
| 746 | 87 274 | 87 280 | 87 286 | 87 291 | 87 297 | 87 303 | 87 309 | 87 315 | 87 320 | 87 326 |
| 747 | 87 332 | 87 338 | 87 344 | 87 349 | 87 355 | 87 361 | 87 367 | 87 373 | 87 379 | 87 384 |
| 748 | 87 390 | 87 396 | 87 402 | 87 408 | 87 413 | 87 419 | 87 425 | 87 431 | 87 437 | 87 442 |
| 749 | 87 448 | 87 454 | 87 460 | 87 466 | 87 471 | 87 477 | 87 483 | 87 489 | 87 495 | 87 500 |
| 750 | 87 506 | 87 512 | 87 518 | 87 523 | 87 529 | 87 535 | 87 541 | 87 547 | 87 552 | 87 558 |
| N | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

| N | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| **750** | 87 506 | 87 512 | 87 518 | 87 523 | 87 529 | 87 535 | 87 541 | 87 547 | 87 552 | 87 558 |
| 751 | 87 564 | 87 570 | 87 576 | 87 581 | 87 587 | 87 593 | 87 599 | 87 604 | 87 610 | 87 616 |
| 752 | 87 622 | 87 628 | 87 633 | 87 639 | 87 645 | 87 651 | 87 656 | 87 662 | 87 668 | 87 674 |
| 753 | 87 679 | 87 685 | 87 691 | 87 697 | 87 703 | 87 708 | 87 714 | 87 720 | 87 726 | 87 731 |
| 754 | 87 737 | 87 743 | 87 749 | 87 754 | 87 760 | 87 766 | 87 772 | 87 777 | 87 783 | 87 789 |
| 755 | 87 795 | 87 800 | 87 806 | 87 812 | 87 818 | 87 823 | 87 829 | 87 835 | 87 841 | 87 846 |
| 756 | 87 852 | 87 858 | 87 864 | 87 869 | 87 875 | 87 881 | 87 887 | 87 892 | 87 898 | 87 904 |
| 757 | 87 910 | 87 915 | 87 921 | 87 927 | 87 933 | 87 938 | 87 944 | 87 950 | 87 955 | 87 961 |
| 758 | 87 967 | 87 973 | 87 978 | 87 984 | 87 990 | 87 996 | 88 001 | 88 007 | 88 013 | 88 018 |
| 759 | 88 024 | 88 030 | 88 036 | 88 041 | 88 047 | 88 053 | 88 058 | 88 064 | 88 070 | 88 076 |
| **760** | 88 081 | 88 087 | 88 093 | 88 098 | 88 104 | 88 110 | 88 116 | 88 121 | 88 127 | 88 133 |
| 761 | 88 138 | 88 144 | 88 150 | 88 156 | 88 161 | 88 167 | 88 173 | 88 178 | 88 184 | 88 190 |
| 762 | 88 195 | 88 201 | 88 207 | 88 213 | 88 218 | 88 224 | 88 230 | 88 235 | 88 241 | 88 247 |
| 763 | 88 252 | 88 258 | 88 264 | 88 270 | 88 275 | 88 281 | 88 287 | 88 292 | 88 298 | 88 304 |
| 764 | 88 309 | 88 315 | 88 321 | 88 326 | 88 332 | 88 338 | 88 343 | 88 349 | 88 355 | 88 360 |
| 765 | 88 366 | 88 372 | 88 377 | 88 383 | 88 389 | 88 395 | 88 400 | 88 406 | 88 412 | 88 417 |
| 766 | 88 423 | 88 429 | 88 434 | 88 440 | 88 446 | 88 451 | 88 457 | 88 463 | 88 468 | 88 474 |
| 767 | 88 480 | 88 485 | 88 491 | 88 497 | 88 502 | 88 508 | 88 513 | 88 519 | 88 525 | 88 530 |
| 768 | 88 536 | 88 542 | 88 547 | 88 553 | 88 559 | 88 564 | 88 570 | 88 576 | 88 581 | 88 587 |
| 769 | 88 593 | 88 598 | 88 604 | 88 610 | 88 615 | 88 621 | 88 627 | 88 632 | 88 638 | 88 643 |
| **770** | 88 649 | 88 655 | 88 660 | 88 666 | 88 672 | 88 677 | 88 683 | 88 689 | 88 694 | 88 700 |
| 771 | 88 705 | 88 711 | 88 717 | 88 722 | 88 728 | 88 734 | 88 739 | 88 745 | 88 750 | 88 756 |
| 772 | 88 762 | 88 767 | 88 773 | 88 779 | 88 784 | 88 790 | 88 795 | 88 801 | 88 807 | 88 812 |
| 773 | 88 818 | 88 824 | 88 829 | 88 835 | 88 840 | 88 846 | 88 852 | 88 857 | 88 863 | 88 868 |
| 774 | 88 874 | 88 880 | 88 885 | 88 891 | 88 897 | 88 902 | 88 908 | 88 913 | 88 919 | 88 925 |
| 775 | 88 930 | 88 936 | 88 941 | 88 947 | 88 953 | 88 958 | 88 964 | 88 969 | 88 975 | 88 981 |
| 776 | 88 986 | 88 992 | 88 997 | 89 003 | 89 009 | 89 014 | 89 020 | 89 025 | 89 031 | 89 037 |
| 777 | 89 042 | 89 048 | 89 053 | 89 059 | 89 064 | 89 070 | 89 076 | 89 081 | 89 087 | 89 092 |
| 778 | 89 098 | 89 104 | 89 109 | 89 115 | 89 120 | 89 126 | 89 131 | 89 137 | 89 143 | 89 148 |
| 779 | 89 154 | 89 159 | 89 165 | 89 170 | 89 176 | 89 182 | 89 187 | 89 193 | 89 198 | 89 204 |
| **780** | 89 209 | 89 215 | 89 221 | 89 226 | 89 232 | 89 237 | 89 243 | 89 248 | 89 254 | 89 260 |
| 781 | 89 265 | 89 271 | 89 276 | 89 282 | 89 287 | 89 293 | 89 298 | 89 304 | 89 310 | 89 315 |
| 782 | 89 321 | 89 326 | 89 332 | 89 337 | 89 343 | 89 348 | 89 354 | 89 360 | 89 365 | 89 371 |
| 783 | 89 376 | 89 382 | 89 387 | 89 393 | 89 398 | 89 404 | 89 409 | 89 415 | 89 421 | 89 426 |
| 784 | 89 432 | 89 437 | 89 443 | 89 448 | 89 454 | 89 459 | 89 465 | 89 470 | 89 476 | 89 481 |
| 785 | 89 487 | 89 492 | 89 498 | 89 504 | 89 509 | 89 515 | 89 520 | 89 526 | 89 531 | 89 537 |
| 786 | 89 542 | 89 548 | 89 553 | 89 559 | 89 564 | 89 570 | 89 575 | 89 581 | 89 586 | 89 592 |
| 787 | 89 597 | 89 603 | 89 609 | 89 614 | 89 620 | 89 625 | 89 631 | 89 636 | 89 642 | 89 647 |
| 788 | 89 653 | 89 658 | 89 664 | 89 669 | 89 675 | 89 680 | 89 686 | 89 691 | 89 697 | 89 702 |
| 789 | 89 708 | 89 713 | 89 719 | 89 724 | 89 730 | 89 735 | 89 741 | 89 746 | 89 752 | 89 757 |
| **790** | 89 763 | 89 768 | 89 774 | 89 779 | 89 785 | 89 790 | 89 796 | 89 801 | 89 807 | 89 812 |
| 791 | 89 818 | 89 823 | 89 829 | 89 834 | 89 840 | 89 845 | 89 851 | 89 856 | 89 862 | 89 867 |
| 792 | 89 873 | 89 878 | 89 883 | 89 889 | 89 894 | 89 900 | 89 905 | 89 911 | 89 916 | 89 922 |
| 793 | 89 927 | 89 933 | 89 938 | 89 944 | 89 949 | 89 955 | 89 960 | 89 966 | 89 971 | 89 977 |
| 794 | 89 982 | 89 988 | 89 993 | 89 998 | 90 004 | 90 009 | 90 015 | 90 020 | 90 026 | 90 031 |
| 795 | 90 037 | 90 042 | 90 048 | 90 053 | 90 059 | 90 064 | 90 069 | 90 075 | 90 080 | 90 086 |
| 796 | 90 091 | 90 097 | 90 102 | 90 108 | 90 113 | 90 119 | 90 124 | 90 129 | 90 135 | 90 140 |
| 797 | 90 146 | 90 151 | 90 157 | 90 162 | 90 168 | 90 173 | 90 179 | 90 184 | 90 189 | 90 195 |
| 798 | 90 200 | 90 206 | 90 211 | 90 217 | 90 222 | 90 227 | 90 233 | 90 238 | 90 244 | 90 249 |
| 799 | 90 255 | 90 260 | 90 266 | 90 271 | 90 276 | 90 282 | 90 287 | 90 293 | 90 298 | 90 304 |
| **800** | 90 309 | 90 314 | 90 320 | 90 325 | 90 331 | 90 336 | 90 342 | 90 347 | 90 352 | 90 358 |
| N | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

| N | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 90 309 | 90 314 | 90 320 | 90 325 | 90 331 | 90 336 | 90 342 | 90 347 | 90 352 | 90 358 |
| 801 | 90 363 | 90 369 | 90 374 | 90 380 | 90 385 | 90 390 | 90 396 | 90 401 | 90 407 | 90 412 |
| 802 | 90 417 | 90 423 | 90 428 | 90 434 | 90 439 | 90 445 | 90 450 | 90 455 | 90 461 | 90 466 |
| 803 | 90 472 | 90 477 | 90 482 | 90 488 | 90 493 | 90 499 | 90 504 | 90 509 | 90 515 | 90 520 |
| 804 | 90 526 | 90 531 | 90 536 | 90 542 | 90 547 | 90 553 | 90 558 | 90 563 | 90 569 | 90 574 |
| 805 | 90 580 | 90 585 | 90 590 | 90 596 | 90 601 | 90 607 | 90 612 | 90 617 | 90 623 | 90 628 |
| 806 | 90 634 | 90 639 | 90 644 | 90 650 | 90 655 | 90 660 | 90 666 | 90 671 | 90 677 | 90 682 |
| 807 | 90 687 | 90 693 | 90 698 | 90 703 | 90 709 | 90 714 | 90 720 | 90 725 | 90 730 | 90 736 |
| 808 | 90 741 | 90 747 | 90 752 | 90 757 | 90 763 | 90 768 | 90 773 | 90 779 | 90 784 | 90 789 |
| 809 | 90 795 | 90 800 | 90 806 | 90 811 | 90 816 | 90 822 | 90 827 | 90 832 | 90 838 | 90 843 |
| 810 | 90 849 | 90 854 | 90 859 | 90 865 | 90 870 | 90 875 | 90 881 | 90 886 | 90 891 | 90 897 |
| 811 | 90 902 | 90 907 | 90 913 | 90 918 | 90 924 | 90 929 | 90 934 | 90 940 | 90 945 | 90 950 |
| 812 | 90 956 | 90 961 | 90 966 | 90 972 | 90 977 | 90 982 | 90 988 | 90 993 | 90 998 | 91 004 |
| 813 | 91 009 | 91 014 | 91 020 | 91 025 | 91 030 | 91 036 | 91 041 | 91 046 | 91 052 | 91 057 |
| 814 | 91 062 | 91 068 | 91 073 | 91 078 | 91 084 | 91 089 | 91 094 | 91 100 | 91 105 | 91 110 |
| 815 | 91 116 | 91 121 | 91 126 | 91 132 | 91 137 | 91 142 | 91 148 | 91 153 | 91 158 | 91 164 |
| 816 | 91 169 | 91 174 | 91 180 | 91 185 | 91 190 | 91 196 | 91 201 | 91 206 | 91 212 | 91 217 |
| 817 | 91 222 | 91 228 | 91 233 | 91 238 | 91 243 | 91 249 | 91 254 | 91 259 | 91 265 | 91 270 |
| 818 | 91 275 | 91 281 | 91 286 | 91 291 | 91 297 | 91 302 | 91 307 | 91 312 | 91 318 | 91 323 |
| 819 | 91 328 | 91 334 | 91 339 | 91 344 | 91 350 | 91 355 | 91 360 | 91 365 | 91 371 | 91 376 |
| 820 | 91 381 | 91 387 | 91 392 | 91 397 | 91 403 | 91 408 | 91 413 | 91 418 | 91 424 | 91 429 |
| 821 | 91 434 | 91 440 | 91 445 | 91 450 | 91 455 | 91 461 | 91 466 | 91 471 | 91 477 | 91 482 |
| 822 | 91 487 | 91 492 | 91 498 | 91 503 | 91 508 | 91 514 | 91 519 | 91 524 | 91 529 | 91 535 |
| 823 | 91 540 | 91 545 | 91 551 | 91 556 | 91 561 | 91 566 | 91 572 | 91 577 | 91 582 | 91 587 |
| 824 | 91 593 | 91 598 | 91 603 | 91 609 | 91 614 | 91 619 | 91 624 | 91 630 | 91 635 | 91 640 |
| 825 | 91 645 | 91 651 | 91 656 | 91 661 | 91 666 | 91 672 | 91 677 | 91 682 | 91 687 | 91 693 |
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| 827 | 91 751 | 91 756 | 91 761 | 91 766 | 91 772 | 91 777 | 91 782 | 91 787 | 91 793 | 91 798 |
| 828 | 91 803 | 91 808 | 91 814 | 91 819 | 91 824 | 91 829 | 91 834 | 91 840 | 91 845 | 91 850 |
| 829 | 91 855 | 91 861 | 91 866 | 91 871 | 91 876 | 91 882 | 91 887 | 91 892 | 91 897 | 91 903 |
| 830 | 91 908 | 91 913 | 91 918 | 91 924 | 91 929 | 91 934 | 91 939 | 91 944 | 91 950 | 91 955 |
| 831 | 91 960 | 91 965 | 91 971 | 91 976 | 91 981 | 91 986 | 91 991 | 91 997 | 92 002 | 92 007 |
| 832 | 92 012 | 92 018 | 92 023 | 92 028 | 92 033 | 92 038 | 92 044 | 92 049 | 92 054 | 92 059 |
| 833 | 92 065 | 92 070 | 92 075 | 92 080 | 92 085 | 92 091 | 92 096 | 92 101 | 92 106 | 92 111 |
| 834 | 92 117 | 92 122 | 92 127 | 92 132 | 92 137 | 92 143 | 92 148 | 92 153 | 92 158 | 92 163 |
| 835 | 92 169 | 92 174 | 92 179 | 92 184 | 92 189 | 92 195 | 92 200 | 92 205 | 92 210 | 92 215 |
| 836 | 92 221 | 92 226 | 92 231 | 92 236 | 92 241 | 92 247 | 92 252 | 92 257 | 92 262 | 92 267 |
| 837 | 92 273 | 92 278 | 92 283 | 92 288 | 92 293 | 92 298 | 92 304 | 92 309 | 92 314 | 92 319 |
| 838 | 92 324 | 92 330 | 92 335 | 92 340 | 92 345 | 92 350 | 92 355 | 92 361 | 92 366 | 92 371 |
| 839 | 92 376 | 92 381 | 92 387 | 92 392 | 92 397 | 92 402 | 92 407 | 92 412 | 92 418 | 92 423 |
| 840 | 92 428 | 92 433 | 92 438 | 92 443 | 92 449 | 92 454 | 92 459 | 92 464 | 92 469 | 92 474 |
| 841 | 92 480 | 92 485 | 92 490 | 92 495 | 92 500 | 92 505 | 92 511 | 92 516 | 92 521 | 92 526 |
| 842 | 92 531 | 92 536 | 92 542 | 92 547 | 92 552 | 92 557 | 92 562 | 92 567 | 92 572 | 92 578 |
| 843 | 92 583 | 92 588 | 92 593 | 92 598 | 92 603 | 92 609 | 92 614 | 92 619 | 92 624 | 92 629 |
| 844 | 92 634 | 92 639 | 92 645 | 92 650 | 92 655 | 92 660 | 92 665 | 92 670 | 92 675 | 92 681 |
| 845 | 92 686 | 92 691 | 92 696 | 92 701 | 92 706 | 92 711 | 92 716 | 92 722 | 92 727 | 92 732 |
| 846 | 92 737 | 92 742 | 92 747 | 92 752 | 92 758 | 92 763 | 92 768 | 92 773 | 92 778 | 92 783 |
| 847 | 92 788 | 92 793 | 92 799 | 92 804 | 92 809 | 92 814 | 92 819 | 92 824 | 92 829 | 92 834 |
| 848 | 92 840 | 92 845 | 92 850 | 92 855 | 92 860 | 92 865 | 92 870 | 92 875 | 92 881 | 92 886 |
| 849 | 92 891 | 92 896 | 92 901 | 92 906 | 92 911 | 92 916 | 92 921 | 92 927 | 92 932 | 92 937 |
| 850 | 92 942 | 92 947 | 92 952 | 92 957 | 92 962 | 92 967 | 92 973 | 92 978 | 92 983 | 92 988 |
| N | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

| N | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| **850** | 92 942 | 92 947 | 92 952 | 92 957 | 92 962 | 92 967 | 92 973 | 92 978 | 92 983 | 92 988 |
| 851 | 92 993 | 92 998 | 93 003 | 93 008 | 93 013 | 93 018 | 93 024 | 93 029 | 93 034 | 93 039 |
| 852 | 93 044 | 93 049 | 93 054 | 93 059 | 93 064 | 93 069 | 93 075 | 93 080 | 93 085 | 93 090 |
| 853 | 93 095 | 93 100 | 93 105 | 93 110 | 93 115 | 93 120 | 93 125 | 93 131 | 93 136 | 93 141 |
| 854 | 93 146 | 93 151 | 93 156 | 93 161 | 93 166 | 93 171 | 93 176 | 93 181 | 93 186 | 93 192 |
| 855 | 93 197 | 93 202 | 93 207 | 93 212 | 93 217 | 93 222 | 93 227 | 93 232 | 93 237 | 93 242 |
| 856 | 93 247 | 93 252 | 93 258 | 93 263 | 93 268 | 93 273 | 93 278 | 93 283 | 93 288 | 93 293 |
| 857 | 93 298 | 93 303 | 93 308 | 93 313 | 93 318 | 93 323 | 93 328 | 93 334 | 93 339 | 93 344 |
| 858 | 93 349 | 93 354 | 93 359 | 93 364 | 93 369 | 93 374 | 93 379 | 93 384 | 93 389 | 93 394 |
| 859 | 93 399 | 93 404 | 93 409 | 93 414 | 93 420 | 93 425 | 93 430 | 93 435 | 93 440 | 93 445 |
| **860** | 93 450 | 93 455 | 93 460 | 93 465 | 93 470 | 93 475 | 93 480 | 93 485 | 93 490 | 93 495 |
| 861 | 93 500 | 93 505 | 93 510 | 93 515 | 93 520 | 93 526 | 93 531 | 93 536 | 93 541 | 93 546 |
| 862 | 93 551 | 93 556 | 93 561 | 93 566 | 93 571 | 93 576 | 93 581 | 93 586 | 93 591 | 93 596 |
| 863 | 93 601 | 93 606 | 93 611 | 93 616 | 93 621 | 93 626 | 93 631 | 93 636 | 93 641 | 93 646 |
| 864 | 93 651 | 93 656 | 93 661 | 93 666 | 93 671 | 93 676 | 93 682 | 93 687 | 93 692 | 93 697 |
| 865 | 93 702 | 93 707 | 93 712 | 93 717 | 93 722 | 93 727 | 93 732 | 93 737 | 93 742 | 93 747 |
| 866 | 93 752 | 93 757 | 93 762 | 93 767 | 93 772 | 93 777 | 93 782 | 93 787 | 93 792 | 93 797 |
| 867 | 93 802 | 93 807 | 93 812 | 93 817 | 93 822 | 93 827 | 93 832 | 93 837 | 93 842 | 93 847 |
| 868 | 93 852 | 93 857 | 93 862 | 93 867 | 93 872 | 93 877 | 93 882 | 93 887 | 93 892 | 93 897 |
| 869 | 93 902 | 93 907 | 93 912 | 93 917 | 93 922 | 93 927 | 93 932 | 93 937 | 93 942 | 93 947 |
| **870** | 93 952 | 93 957 | 93 962 | 93 967 | 93 972 | 93 977 | 93 982 | 93 987 | 93 992 | 93 997 |
| 871 | 94 002 | 94 007 | 94 012 | 94 017 | 94 022 | 94 027 | 94 032 | 94 037 | 94 042 | 94 047 |
| 872 | 94 052 | 94 057 | 94 062 | 94 067 | 94 072 | 94 077 | 94 082 | 94 086 | 94 091 | 94 096 |
| 873 | 94 101 | 94 106 | 94 111 | 94 116 | 94 121 | 94 126 | 94 131 | 94 136 | 94 141 | 94 146 |
| 874 | 94 151 | 94 156 | 94 161 | 94 166 | 94 171 | 94 176 | 94 181 | 94 186 | 94 191 | 94 196 |
| 875 | 94 201 | 94 206 | 94 211 | 94 216 | 94 221 | 94 226 | 94 231 | 94 236 | 94 240 | 94 245 |
| 876 | 94 250 | 94 255 | 94 260 | 94 265 | 94 270 | 94 275 | 94 280 | 94 285 | 94 290 | 94 295 |
| 877 | 94 300 | 94 305 | 94 310 | 94 315 | 94 320 | 94 325 | 94 330 | 94 335 | 94 340 | 94 345 |
| 878 | 94 349 | 94 354 | 94 359 | 94 364 | 94 369 | 94 374 | 94 379 | 94 384 | 94 389 | 94 394 |
| 879 | 94 399 | 94 404 | 94 409 | 94 414 | 94 419 | 94 424 | 94 429 | 94 433 | 94 438 | 94 443 |
| **880** | 94 448 | 94 453 | 94 458 | 94 463 | 94 468 | 94 473 | 94 478 | 94 483 | 94 488 | 94 493 |
| 881 | 94 498 | 94 503 | 94 507 | 94 512 | 94 517 | 94 522 | 94 527 | 94 532 | 94 537 | 94 542 |
| 882 | 94 547 | 94 552 | 94 557 | 94 562 | 94 567 | 94 571 | 94 576 | 94 581 | 94 586 | 94 591 |
| 883 | 94 596 | 94 601 | 94 606 | 94 611 | 94 616 | 94 621 | 94 626 | 94 630 | 94 635 | 94 640 |
| 884 | 94 645 | 94 650 | 94 655 | 94 660 | 94 665 | 94 670 | 94 675 | 94 680 | 94 685 | 94 689 |
| 885 | 94 694 | 94 699 | 94 704 | 94 709 | 94 714 | 94 719 | 94 724 | 94 729 | 94 734 | 94 738 |
| 886 | 94 743 | 94 748 | 94 753 | 94 758 | 94 763 | 94 768 | 94 773 | 94 778 | 94 783 | 94 787 |
| 887 | 94 792 | 94 797 | 94 802 | 94 807 | 94 812 | 94 817 | 94 822 | 94 827 | 94 832 | 94 836 |
| 888 | 94 841 | 94 846 | 94 851 | 94 856 | 94 861 | 94 866 | 94 871 | 94 876 | 94 880 | 94 885 |
| 889 | 94 890 | 94 895 | 94 900 | 94 905 | 94 910 | 94 915 | 94 919 | 94 924 | 94 929 | 94 934 |
| **890** | 94 939 | 94 944 | 94 949 | 94 954 | 94 959 | 94 963 | 94 968 | 94 973 | 94 978 | 94 983 |
| 891 | 94 988 | 94 993 | 94 998 | 95 002 | 95 007 | 95 012 | 95 017 | 95 022 | 95 027 | 95 032 |
| 892 | 95 036 | 95 041 | 95 046 | 95 051 | 95 056 | 95 061 | 95 066 | 95 071 | 95 075 | 95 080 |
| 893 | 95 085 | 95 090 | 95 095 | 95 100 | 95 105 | 95 109 | 95 114 | 95 119 | 95 124 | 95 129 |
| 894 | 95 134 | 95 139 | 95 143 | 95 148 | 95 153 | 95 158 | 95 163 | 95 168 | 95 173 | 95 177 |
| 895 | 95 182 | 95 187 | 95 192 | 95 197 | 95 202 | 95 207 | 95 211 | 95 216 | 95 221 | 95 226 |
| 896 | 95 231 | 95 236 | 95 240 | 95 245 | 95 250 | 95 255 | 95 260 | 95 265 | 95 270 | 95 274 |
| 897 | 95 279 | 95 284 | 95 289 | 95 294 | 95 299 | 95 303 | 95 308 | 95 313 | 95 318 | 95 323 |
| 898 | 95 328 | 95 332 | 95 337 | 95 342 | 95 347 | 95 352 | 95 357 | 95 361 | 95 366 | 95 371 |
| 899 | 95 376 | 95 381 | 95 386 | 95 390 | 95 395 | 95 400 | 95 405 | 95 410 | 95 415 | 95 419 |
| **900** | 95 424 | 95 429 | 95 434 | 95 439 | 95 444 | 95 448 | 95 453 | 95 458 | 95 463 | 95 468 |
| N | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

| N | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| **900** | 95 424 | 95 429 | 95 434 | 95 439 | 95 444 | 95 448 | 95 453 | 95 458 | 95 463 | 95 468 |
| 901 | 95 472 | 95 477 | 95 482 | 95 487 | 95 492 | 95 497 | 95 501 | 95 506 | 95 511 | 95 516 |
| 902 | 95 521 | 95 525 | 95 530 | 95 535 | 95 540 | 95 545 | 95 550 | 95 554 | 95 559 | 95 564 |
| 903 | 95 569 | 95 574 | 95 578 | 95 583 | 95 588 | 95 593 | 95 598 | 95 602 | 95 607 | 95 612 |
| 904 | 95 617 | 95 622 | 95 626 | 95 631 | 95 636 | 95 641 | 95 646 | 95 650 | 95 655 | 95 660 |
| 905 | 95 665 | 95 670 | 95 674 | 95 679 | 95 684 | 95 689 | 95 694 | 95 698 | 95 703 | 95 708 |
| 906 | 95 713 | 95 718 | 95 722 | 95 727 | 95 732 | 95 737 | 95 742 | 95 746 | 95 751 | 95 756 |
| 907 | 95 761 | 95 766 | 95 770 | 95 775 | 95 780 | 95 785 | 95 789 | 95 794 | 95 799 | 95 804 |
| 908 | 95 809 | 95 813 | 95 818 | 95 823 | 95 828 | 95 832 | 95 837 | 95 842 | 95 847 | 95 852 |
| 909 | 95 856 | 95 861 | 95 866 | 95 871 | 95 875 | 95 880 | 95 885 | 95 890 | 95 895 | 95 899 |
| **910** | 95 904 | 95 909 | 95 914 | 95 918 | 95 923 | 95 928 | 95 933 | 95 938 | 95 942 | 95 947 |
| 911 | 95 952 | 95 957 | 95 961 | 95 966 | 95 971 | 95 976 | 95 980 | 95 985 | 95 990 | 95 995 |
| 912 | 95 999 | 96 004 | 96 009 | 96 014 | 96 019 | 96 023 | 96 028 | 96 033 | 96 038 | 96 042 |
| 913 | 96 047 | 96 052 | 96 057 | 96 061 | 96 066 | 96 071 | 96 076 | 96 080 | 96 085 | 96 090 |
| 914 | 96 095 | 96 099 | 96 104 | 96 109 | 96 114 | 96 118 | 96 123 | 96 128 | 96 133 | 96 137 |
| 915 | 96 142 | 96 147 | 96 152 | 96 156 | 96 161 | 96 166 | 96 171 | 96 175 | 96 180 | 96 185 |
| 916 | 96 190 | 96 194 | 96 199 | 96 204 | 96 209 | 96 213 | 96 218 | 96 223 | 96 227 | 96 232 |
| 917 | 96 237 | 96 242 | 96 246 | 96 251 | 96 256 | 96 261 | 96 265 | 96 270 | 96 275 | 96 280 |
| 918 | 96 284 | 96 289 | 96 294 | 96 298 | 96 303 | 96 308 | 96 313 | 96 317 | 96 322 | 96 327 |
| 919 | 96 332 | 96 336 | 96 341 | 96 346 | 96 350 | 96 355 | 96 360 | 96 365 | 96 369 | 96 374 |
| **920** | 96 379 | 96 384 | 96 388 | 96 393 | 96 398 | 96 402 | 96 407 | 96 412 | 96 417 | 96 421 |
| 921 | 96 426 | 96 431 | 96 435 | 96 440 | 96 445 | 96 450 | 96 454 | 96 459 | 96 464 | 96 468 |
| 922 | 96 473 | 96 478 | 96 483 | 96 487 | 96 492 | 96 497 | 96 501 | 96 506 | 96 511 | 96 515 |
| 923 | 96 520 | 96 525 | 96 530 | 96 534 | 96 539 | 96 544 | 96 548 | 96 553 | 96 558 | 96 562 |
| 924 | 96 567 | 96 572 | 96 577 | 96 581 | 96 586 | 96 591 | 96 595 | 96 600 | 96 605 | 96 609 |
| 925 | 96 614 | 96 619 | 96 624 | 96 628 | 96 633 | 96 638 | 96 642 | 96 647 | 96 652 | 96 656 |
| 926 | 96 661 | 96 666 | 96 670 | 96 675 | 96 680 | 96 685 | 96 689 | 96 694 | 96 699 | 96 703 |
| 927 | 96 708 | 96 713 | 96 717 | 96 722 | 96 727 | 96 731 | 96 736 | 96 741 | 96 745 | 96 750 |
| 928 | 96 755 | 96 759 | 96 764 | 96 769 | 96 774 | 96 778 | 96 783 | 96 788 | 96 792 | 96 797 |
| 929 | 96 802 | 96 806 | 96 811 | 96 816 | 96 820 | 96 825 | 96 830 | 96 834 | 96 839 | 96 844 |
| **930** | 96 848 | 96 853 | 96 858 | 96 862 | 96 867 | 96 872 | 96 876 | 96 881 | 96 886 | 96 890 |
| 931 | 96 895 | 96 900 | 96 904 | 96 909 | 96 914 | 96 918 | 96 923 | 96 928 | 96 932 | 96 937 |
| 932 | 96 942 | 96 946 | 96 951 | 96 956 | 96 960 | 96 965 | 96 970 | 96 974 | 96 979 | 96 984 |
| 933 | 96 988 | 96 993 | 96 997 | 97 002 | 97 007 | 97 011 | 97 016 | 97 021 | 97 025 | 97 030 |
| 934 | 97 035 | 97 039 | 97 044 | 97 049 | 97 053 | 97 058 | 97 063 | 97 067 | 97 072 | 97 077 |
| 935 | 97 081 | 97 086 | 97 090 | 97 095 | 97 100 | 97 104 | 97 109 | 97 114 | 97 118 | 97 123 |
| 936 | 97 128 | 97 132 | 97 137 | 97 142 | 97 146 | 97 151 | 97 155 | 97 160 | 97 165 | 97 169 |
| 937 | 97 174 | 97 179 | 97 183 | 97 188 | 97 192 | 97 197 | 97 202 | 97 206 | 97 211 | 97 216 |
| 938 | 97 220 | 97 225 | 97 230 | 97 234 | 97 239 | 97 243 | 97 248 | 97 253 | 97 257 | 97 262 |
| 939 | 97 267 | 97 271 | 97 276 | 97 280 | 97 285 | 97 290 | 97 294 | 97 299 | 97 304 | 97 308 |
| **940** | 97 313 | 97 317 | 97 322 | 97 327 | 97 331 | 97 336 | 97 340 | 97 345 | 97 350 | 97 354 |
| 941 | 97 359 | 97 364 | 97 368 | 97 373 | 97 377 | 97 382 | 97 387 | 97 391 | 97 396 | 97 400 |
| 942 | 97 405 | 97 410 | 97 414 | 97 419 | 97 424 | 97 428 | 97 433 | 97 437 | 97 442 | 97 447 |
| 943 | 97 451 | 97 456 | 97 460 | 97 465 | 97 470 | 97 474 | 97 479 | 97 483 | 97 488 | 97 493 |
| 944 | 97 497 | 97 502 | 97 506 | 97 511 | 97 516 | 97 520 | 97 525 | 97 529 | 97 534 | 97 539 |
| 945 | 97 543 | 97 548 | 97 552 | 97 557 | 97 562 | 97 566 | 97 571 | 97 575 | 97 580 | 97 585 |
| 946 | 97 589 | 97 594 | 97 598 | 97 603 | 97 607 | 97 612 | 97 617 | 97 621 | 97 626 | 97 630 |
| 947 | 97 635 | 97 640 | 97 644 | 97 649 | 97 653 | 97 658 | 97 663 | 97 667 | 97 672 | 97 676 |
| 948 | 97 681 | 97 685 | 97 690 | 97 695 | 97 699 | 97 704 | 97 708 | 97 713 | 97 717 | 97 722 |
| 949 | 97 727 | 97 731 | 97 736 | 97 740 | 97 745 | 97 749 | 97 754 | 97 759 | 97 763 | 97 768 |
| **950** | 97 772 | 97 777 | 97 782 | 97 786 | 97 791 | 97 795 | 97 800 | 97 804 | 97 809 | 97 813 |
| N | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

| N | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| **950** | 97 772 | 97 777 | 97 782 | 97 786 | 97 791 | 97 795 | 97 800 | 97 804 | 97 809 | 97 813 |
| 951 | 97 818 | 97 823 | 97 827 | 97 832 | 97 836 | 97 841 | 97 845 | 97 850 | 97 855 | 97 859 |
| 952 | 97 864 | 97 868 | 97 873 | 97 877 | 97 882 | 97 886 | 97 891 | 97 896 | 97 900 | 97 905 |
| 953 | 97 909 | 97 914 | 97 918 | 97 923 | 97 928 | 97 932 | 97 937 | 97 941 | 97 946 | 97 950 |
| 954 | 97 955 | 97 959 | 97 964 | 97 968 | 97 973 | 97 978 | 97 982 | 97 987 | 97 991 | 97 996 |
| 955 | 98 000 | 98 005 | 98 009 | 98 014 | 98 019 | 98 023 | 98 028 | 98 032 | 98 037 | 98 041 |
| 956 | 98 046 | 98 050 | 98 055 | 98 059 | 98 064 | 98 068 | 98 073 | 98 078 | 98 082 | 98 087 |
| 957 | 98 091 | 98 096 | 98 100 | 98 105 | 98 109 | 98 114 | 98 118 | 98 123 | 98 127 | 98 132 |
| 958 | 98 137 | 98 141 | 98 146 | 98 150 | 98 155 | 98 159 | 98 164 | 98 168 | 98 173 | 98 177 |
| 959 | 98 182 | 98 186 | 98 191 | 98 195 | 98 200 | 98 204 | 98 209 | 98 214 | 98 218 | 98 223 |
| **960** | 98 227 | 98 232 | 98 236 | 98 241 | 98 245 | 98 250 | 98 254 | 98 259 | 98 263 | 98 268 |
| 961 | 98 272 | 98 277 | 98 281 | 98 286 | 98 290 | 98 295 | 98 299 | 98 304 | 98 308 | 98 313 |
| 962 | 98 318 | 98 322 | 98 327 | 98 331 | 98 336 | 98 340 | 98 345 | 98 349 | 98 354 | 98 358 |
| 963 | 98 363 | 98 367 | 98 372 | 98 376 | 98 381 | 98 385 | 98 390 | 98 394 | 98 399 | 98 403 |
| 964 | 98 408 | 98 412 | 98 417 | 98 421 | 98 426 | 98 430 | 98 435 | 98 439 | 98 444 | 98 448 |
| 965 | 98 453 | 98 457 | 98 462 | 98 466 | 98 471 | 98 475 | 98 480 | 98 484 | 98 489 | 98 493 |
| 966 | 98 498 | 98 502 | 98 507 | 98 511 | 98 516 | 98 520 | 98 525 | 98 529 | 98 534 | 98 538 |
| 967 | 98 543 | 98 547 | 98 552 | 98 556 | 98 561 | 98 565 | 98 570 | 98 574 | 98 579 | 98 583 |
| 968 | 98 588 | 98 592 | 98 597 | 98 601 | 98 605 | 98 610 | 98 614 | 98 619 | 98 623 | 98 628 |
| 969 | 98 632 | 98 637 | 98 641 | 98 646 | 98 650 | 98 655 | 98 659 | 98 664 | 98 668 | 98 673 |
| **970** | 98 677 | 98 682 | 98 686 | 98 691 | 98 695 | 98 700 | 98 704 | 98 709 | 98 713 | 98 717 |
| 971 | 98 722 | 98 726 | 98 731 | 98 735 | 98 740 | 98 744 | 98 749 | 98 753 | 98 758 | 98 762 |
| 972 | 98 767 | 98 771 | 98 776 | 98 780 | 98 784 | 98 789 | 98 793 | 98 798 | 98 802 | 98 807 |
| 973 | 98 811 | 98 816 | 98 820 | 98 825 | 98 829 | 98 834 | 98 838 | 98 843 | 98 847 | 98 851 |
| 974 | 98 856 | 98 860 | 98 865 | 98 869 | 98 874 | 98 878 | 98 883 | 98 887 | 98 892 | 98 896 |
| 975 | 98 900 | 98 905 | 98 909 | 98 914 | 98 918 | 98 923 | 98 927 | 98 932 | 98 936 | 98 941 |
| 976 | 98 945 | 98 949 | 98 954 | 98 958 | 98 963 | 98 967 | 98 972 | 98 976 | 98 981 | 98 985 |
| 977 | 98 989 | 98 994 | 98 998 | 99 003 | 99 007 | 99 012 | 99 016 | 99 021 | 99 025 | 99 029 |
| 978 | 99 034 | 99 038 | 99 043 | 99 047 | 99 052 | 99 056 | 99 061 | 99 065 | 99 069 | 99 074 |
| 979 | 99 078 | 99 083 | 99 087 | 99 092 | 99 096 | 99 100 | 99 105 | 99 109 | 99 114 | 99 118 |
| **980** | 99 123 | 99 127 | 99 131 | 99 136 | 99 140 | 99 145 | 99 149 | 99 154 | 99 158 | 99 162 |
| 981 | 99 167 | 99 171 | 99 176 | 99 180 | 99 185 | 99 189 | 99 193 | 99 198 | 99 202 | 99 207 |
| 982 | 99 211 | 99 216 | 99 220 | 99 224 | 99 229 | 99 233 | 99 238 | 99 242 | 99 247 | 99 251 |
| 983 | 99 255 | 99 260 | 99 264 | 99 269 | 99 273 | 99 277 | 99 282 | 99 286 | 99 291 | 99 295 |
| 984 | 99 300 | 99 304 | 99 308 | 99 313 | 99 317 | 99 322 | 99 326 | 99 330 | 99 335 | 99 339 |
| 985 | 99 344 | 99 348 | 99 352 | 99 357 | 99 361 | 99 366 | 99 370 | 99 374 | 99 379 | 99 383 |
| 986 | 99 388 | 99 392 | 99 396 | 99 401 | 99 405 | 99 410 | 99 414 | 99 419 | 99 423 | 99 427 |
| 987 | 99 432 | 99 436 | 99 441 | 99 445 | 99 449 | 99 454 | 99 458 | 99 463 | 99 467 | 99 471 |
| 988 | 99 476 | 99 480 | 99 484 | 99 489 | 99 493 | 99 498 | 99 502 | 99 506 | 99 511 | 99 515 |
| 989 | 99 520 | 99 524 | 99 528 | 99 533 | 99 537 | 99 542 | 99 546 | 99 550 | 99 555 | 99 559 |
| **990** | 99 564 | 99 568 | 99 572 | 99 577 | 99 581 | 99 585 | 99 590 | 99 594 | 99 599 | 99 603 |
| 991 | 99 607 | 99 612 | 99 616 | 99 621 | 99 625 | 99 629 | 99 634 | 99 638 | 99 642 | 99 647 |
| 992 | 99 651 | 99 656 | 99 660 | 99 664 | 99 669 | 99 673 | 99 677 | 99 682 | 99 686 | 99 691 |
| 993 | 99 695 | 99 699 | 99 704 | 99 708 | 99 712 | 99 717 | 99 721 | 99 726 | 99 730 | 99 734 |
| 994 | 99 739 | 99 743 | 99 747 | 99 752 | 99 756 | 99 760 | 99 765 | 99 769 | 99 774 | 99 778 |
| 995 | 99 782 | 99 787 | 99 791 | 99 795 | 99 800 | 99 804 | 99 808 | 99 813 | 99 817 | 99 822 |
| 996 | 99 826 | 99 830 | 99 835 | 99 839 | 99 843 | 99 848 | 99 852 | 99 856 | 99 861 | 99 865 |
| 997 | 99 870 | 99 874 | 99 878 | 99 883 | 99 887 | 99 891 | 99 896 | 99 900 | 99 904 | 99 909 |
| 998 | 99 913 | 99 917 | 99 922 | 99 926 | 99 930 | 99 935 | 99 939 | 99 944 | 99 948 | 99 952 |
| 999 | 99 957 | 99 961 | 99 965 | 99 970 | 99 974 | 99 978 | 99 983 | 99 987 | 99 991 | 99 996 |
| **1000** | 00 000 | 00 004 | 00 009 | 00 013 | 00 017 | 00 022 | 00 026 | 00 030 | 00 035 | 00 039 |
| N | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

|  | log |
|---|---|
| Circumference of the Circle in degrees . . . . . . . . . = 360 | 2. 55 630 250 |
| Circumference of the Circle in minutes . . . . . . . . = 21 600 | 4. 33 445 375 |
| Circumference of the Circle in seconds . . . . . . . . = 1 296 000 | 6. 11 260 500 |
| If the radius $r = 1$, half the Circumference of the Circle is |  |
| $\pi$ = 3. 14 159 265 358 979 323 846 264 338 328 . . . . . . . . . . . | 0. 49 714 987 |

| Also: | log |  | log |
|---|---|---|---|
| $2\pi =$ 6. 28 318 531 | 0. 79 817 987 | $\pi^2$ = 9. 86 960 440 | 0. 99 429 975 |
| $4\pi =$ 12. 56 637 061 | 1. 09 920 986 | $\dfrac{1}{\pi^2}$ = 0. 10 132 118 | 9. 00 570 025 — 10 |
| $\dfrac{\pi}{2} =$ 1. 57 079 633 | 0. 19 611 988 | $\sqrt{\pi}$ = 1. 77 245 385 | 0. 24 857 494 |
| $\dfrac{\pi}{3} =$ 1. 04 719 755 | 0. 02 002 862 | $\dfrac{1}{\sqrt{\pi}}$ = 0. 56 418 958 | 9. 75 142 506 — 10 |
| $\dfrac{4\pi}{3} =$ 4. 18 879 020 | 0. 62 208 861 | $\sqrt{\dfrac{3}{\pi}}$ = 0. 97 720 502 | 9. 98 998 569 — 10 |
| $\dfrac{\pi}{4} =$ 0. 78 539 816 | 9. 89 508 988 — 10 | $\sqrt{\dfrac{4}{\pi}}$ = 1. 12 837 917 | 0. 05 245 506 |
| $\dfrac{\pi}{6} =$ 0. 52 359 878 | 9. 71 899 862 — 10 | $\sqrt[3]{\pi}$ = 1. 46 459 189 | 0. 16 571 662 |
| $\dfrac{1}{\pi} =$ 0. 31 830 989 | 9. 50 285 013 — 10 | $\dfrac{1}{\sqrt[3]{\pi}}$ = 0. 68 278 406 | 9. 83 428 338 — 10 |
| $\dfrac{1}{2\pi} =$ 0. 15 915 494 | 9. 20 182 013 — 10 | $\sqrt[3]{\pi^2}$ = 2. 14 502 940 | 0. 33 143 325 |
| $\dfrac{3}{\pi} =$ 0. 95 492 966 | 9. 97 997 138 — 10 | $\sqrt[3]{\dfrac{3}{4\pi}}$ = 0. 62 035 049 | 9. 79 263 713 — 10 |
| $\dfrac{4}{\pi} =$ 1. 27 323 954 | 0. 10 491 012 | $\sqrt[3]{\dfrac{\pi}{6}}$ = 0. 80 599 598 | 9. 90 633 287 — 10 |
| $\dfrac{3}{4\pi} =$ 0. 23 873 241 | 9. 37 791 139 — 10 |  |  |

Arc $a$, whose length is equal to the radius $r$, is:

|  | log |
|---|---|
| in degrees . . . . . $a^\circ$ . . . . . $= \dfrac{180}{\pi}$ . . . . . . . . $=$ 57. 29 577 951° . . | 1. 75 812 263 |
| in minutes . . . . . $a'$ . . . . . $= \dfrac{10\ 800}{\pi}$ . . . . . . $=$ 3 437. 74 677' . . | 3. 53 627 388 |
| in seconds . . . . . $a''$ . . . . . $= \dfrac{648\ 000}{\pi}$ . . . . . $=$ 206 264. 806'' . . | 5. 31 442 513 |

Arc $2a$, whose length is equal to twice the radius, $2r$, is:

| in degrees . . . . . $2a^\circ$ . . . . $= \dfrac{360}{\pi}$ . . . . . . . . $=$ 114. 59 155 903° | 2. 05 915 263 |
|---|---|
| in minutes . . . . . $2a'$ . . . . $= \dfrac{21\ 600}{\pi}$ . . . . . . $=$ 6 875. 49 354' . . | 3. 83 730 388 |
| in seconds . . . . . $2a''$ . . . . $= \dfrac{1\ 296\ 000}{\pi}$ . . . . $=$ 412 529. 612'' . . | 5. 61 545 513 |

If the radius $r = 1$, the length of the arc is:

| for 1 degree . . . . $\dfrac{1}{a^\circ}$ . . . . $= \dfrac{\pi}{180}$ . . . . . . . . $=$ 0. 01 745 329 . . . | 8. 24 187 737 — 10 |
|---|---|
| for 1 minute . . . . $\dfrac{1}{a'}$ . . . . $= \dfrac{\pi}{10\ 800}$ . . . . . . $=$ 0. 00 029 089 . . . | 6. 46 372 612 — 10 |
| for 1 second . . . . $\dfrac{1}{a''}$ . . . . $= \dfrac{\pi}{648\ 000}$ . . . . . $=$ 0. 00 000 485 . . . | 4. 68 557 487 — 10 |
| for ½ degree . . . . $\dfrac{1}{2a^\circ}$ . . . . $= \dfrac{\pi}{360}$ . . . . . . . . $=$ 0. 00 872 665 . . . | 7. 94 084 737 — 10 |
| for ½ minute . . . . $\dfrac{1}{2a'}$ . . . . $= \dfrac{\pi}{21\ 600}$ . . . . . . $=$ 0. 00 014 544 . . . | 6. 16 269 612 — 10 |
| for ½ second . . . . $\dfrac{1}{2a''}$ . . . . $= \dfrac{\pi}{1\ 296\ 000}$ . . . . $=$ 0. 00 000 242 . . . | 4. 38 454 487 — 10 |
| Sin 1'' in the unit circle . . . . . . . . . . . . . . . . . . $=$ 0. 00 000 485 . . . | 4. 68 557 487 — 10 |

# TABLE III.

## THE LOGARITHMS

OF THE

# TRIGONOMETRIC FUNCTIONS:

From 0° to 0° 3′, or 89° 57′ to 90°, for every second;
From 0° to 2°, or 88° to 90°, for every ten seconds;
From 1° to 89°, for every minute.

NOTE. To all the logarithms —10 is to be appended.

log sin     0°     log tan = log sin
log cos = 10. 00 000

| ″ | 0′ | 1′ | 2′ | ″ | ″ | 0′ | 1′ | 2′ | ″ |
|---|---|---|---|---|---|---|---|---|---|
| 0 | — | 6. 46 373 | 6. 76 476 | 60 | 30 | 6. 16 270 | 6. 63 982 | 6. 86 167 | 30 |
| 1 | 4. 68 557 | 6. 47 090 | 6. 76 836 | 59 | 31 | 6. 17 694 | 6. 64 462 | 6. 86 455 | 29 |
| 2 | 4. 98 660 | 6. 47 797 | 6. 77 193 | 58 | 32 | 6. 19 072 | 6. 64 936 | 6. 86 742 | 28 |
| 3 | 5. 16 270 | 6. 48 492 | 6. 77 548 | 57 | 33 | 6. 20 409 | 6. 65 406 | 6. 87 027 | 27 |
| 4 | 5. 28 763 | 6. 49 175 | 6. 77 900 | 56 | 34 | 6. 21 705 | 6. 65 870 | 6. 87 310 | 26 |
| 5 | 5. 38 454 | 6. 49 849 | 6. 78 248 | 55 | 35 | 6. 22 964 | 6. 66 330 | 6. 87 591 | 25 |
| 6 | 5. 46 373 | 6. 50 512 | 6. 78 595 | 54 | 36 | 6. 24 188 | 6. 66 785 | 6. 87 870 | 24 |
| 7 | 5. 53 067 | 6. 51 165 | 6. 78 938 | 53 | 37 | 6. 25 378 | 6. 67 235 | 6. 88 147 | 23 |
| 8 | 5. 58 866 | 6. 51 808 | 6. 79 278 | 52 | 38 | 6. 26 536 | 6. 67 680 | 6. 88 423 | 22 |
| 9 | 5. 63 982 | 6. 52 442 | 6. 79 616 | 51 | 39 | 6. 27 664 | 6. 68 121 | 6. 88 697 | 21 |
| 10 | 5. 68 557 | 6. 53 067 | 6. 79 952 | 50 | 40 | 6. 28 763 | 6. 68 557 | 6. 88 969 | 20 |
| 11 | 5. 72 697 | 6. 53 683 | 6. 80 285 | 49 | 41 | 6. 29 836 | 6. 68 990 | 6. 89 240 | 19 |
| 12 | 5. 76 476 | 6. 54 291 | 6. 80 615 | 48 | 42 | 6. 30 882 | 6. 69 418 | 6. 89 509 | 18 |
| 13 | 5. 79 952 | 6. 54 890 | 6. 80 943 | 47 | 43 | 6. 31 904 | 6. 69 841 | 6. 89 776 | 17 |
| 14 | 5. 83 170 | 6. 55 481 | 6. 81 268 | 46 | 44 | 6. 32 903 | 6. 70 261 | 6. 90 042 | 16 |
| 15 | 5. 86 167 | 6. 56 064 | 6. 81 591 | 45 | 45 | 6. 33 879 | 6. 70 676 | 6. 90 306 | 15 |
| 16 | 5. 88 969 | 6. 56 639 | 6. 81 911 | 44 | 46 | 6. 34 833 | 6. 71 088 | 6. 90 568 | 14 |
| 17 | 5. 91 602 | 6. 57 207 | 6. 82 230 | 43 | 47 | 6. 35 767 | 6. 71 496 | 6. 90 829 | 13 |
| 18 | 5. 94 085 | 6. 57 767 | 6. 82 545 | 42 | 48 | 6. 36 682 | 6. 71 900 | 6. 91 088 | 12 |
| 19 | 5. 96 433 | 6. 58 320 | 6. 82 859 | 41 | 49 | 6. 37 577 | 6. 72 300 | 6. 91 346 | 11 |
| 20 | 5. 98 660 | 6. 58 866 | 6. 83 170 | 40 | 50 | 6. 38 454 | 6. 72 697 | 6. 91 602 | 10 |
| 21 | 6. 00 779 | 6. 59 406 | 6. 83 479 | 39 | 51 | 6. 39 315 | 6. 73 090 | 6. 91 857 | 9 |
| 22 | 6. 02 800 | 6. 59 939 | 6. 83 786 | 38 | 52 | 6. 40 158 | 6. 73 479 | 6. 92 110 | 8 |
| 23 | 6. 04 730 | 6. 60 465 | 6. 84 091 | 37 | 53 | 6. 40 985 | 6. 73 865 | 6. 92 362 | 7 |
| 24 | 6. 06 579 | 6. 60 985 | 6. 84 394 | 36 | 54 | 6. 41 797 | 6. 74 248 | 6. 92 612 | 6 |
| 25 | 6. 08 351 | 6. 61 499 | 6. 84 694 | 35 | 55 | 6. 42 594 | 6. 74 627 | 6. 92 861 | 5 |
| 26 | 6. 10 055 | 6. 62 007 | 6. 84 993 | 34 | 56 | 6. 43 376 | 6. 75 003 | 6. 93 109 | 4 |
| 27 | 6. 11 694 | 6. 62 509 | 6. 85 289 | 33 | 57 | 6. 44 145 | 6. 75 376 | 6. 93 355 | 3 |
| 28 | 6. 13 273 | 6. 63 006 | 6. 85 584 | 32 | 58 | 6. 44 900 | 6. 75 746 | 6. 93 599 | 2 |
| 29 | 6. 14 797 | 6. 63 496 | 6. 85 876 | 31 | 59 | 6. 45 643 | 6. 76 112 | 6. 93 843 | 1 |
| 30 | 6. 16 270 | 6. 63 982 | 6. 86 167 | 30 | 60 | 6. 46 373 | 6. 76 476 | 6. 94 085 | 0 |
| ″ | 59′ | 58′ | 57′ | ″ | ″ | 59′ | 58′ | 57′ | ″ |

log cot = log cos
log sin = 10. 00 000     **89°**     log cos

| ′ ″ | log sin | log tan | log cos | ″ ′ | ′ ″ | log sin | log tan | log cos | ″ ′ |
|---|---|---|---|---|---|---|---|---|---|
| **0 0** | — | — | 10.00000 | **0 60** | **10 0** | 7.46 373 | 7.46 373 | 10.00000 | **0 50** |
| 10 | 5. 68 557 | 5. 68 557 | 10.00000 | 50 | 10 | 7.47 090 | 7.47 091 | 10.00000 | 50 |
| 20 | 5. 98 660 | 5. 98 660 | 10.00000 | 40 | 20 | 7.47 797 | 7.47 797 | 10.00000 | 40 |
| 30 | 6. 16 270 | 6. 16 270 | 10.00000 | 30 | 30 | 7.48 491 | 7.48 492 | 10.00000 | 30 |
| 40 | 6. 28 763 | 6. 28 763 | 10.00000 | 20 | 40 | 7.49 175 | 7.49 176 | 10.00000 | 20 |
| 50 | 6. 38 454 | 6. 38 454 | 10.00000 | 10 | 50 | 7.49 849 | 7.49 849 | 10.00000 | 10 |
| **1 0** | 6. 46 373 | 6. 46 373 | 10.00000 | **0 59** | **11 0** | 7.50 512 | 7.50 512 | 10.00000 | **0 49** |
| 10 | 6. 53 067 | 6. 53 067 | 10.00000 | 50 | 10 | 7.51 165 | 7.51 165 | 10.00000 | 50 |
| 20 | 6. 58 866 | 6. 58 866 | 10.00000 | 40 | 20 | 7.51 808 | 7.51 809 | 10.00000 | 40 |
| 30 | 6. 63 982 | 6. 63 982 | 10.00000 | 30 | 30 | 7.52 442 | 7.52 443 | 10.00000 | 30 |
| 40 | 6. 68 557 | 6. 68 557 | 10.00000 | 20 | 40 | 7.53 067 | 7.53 067 | 10.00000 | 20 |
| 50 | 6. 72 697 | 6. 72 697 | 10.00000 | 10 | 50 | 7.53 683 | 7.53 683 | 10.00000 | 10 |
| **2 0** | 6. 76 476 | 6. 76 476 | 10.00000 | **0 58** | **12 0** | 7.54 291 | 7.54 291 | 10.00000 | **0 48** |
| 10 | 6. 79 952 | 6. 79 952 | 10.00000 | 50 | 10 | 7.54 890 | 7.54 890 | 10.00000 | 50 |
| 20 | 6. 83 170 | 6. 83 170 | 10.00000 | 40 | 20 | 7.55 481 | 7.55 481 | 10.00000 | 40 |
| 30 | 6. 86 167 | 6. 86 167 | 10.00000 | 30 | 30 | 7.56 064 | 7.56 064 | 10.00000 | 30 |
| 40 | 6. 88 969 | 6. 88 969 | 10.00000 | 20 | 40 | 7.56 639 | 7.56 639 | 10.00000 | 20 |
| 50 | 6. 91 602 | 6. 91 602 | 10.00000 | 10 | 50 | 7.57 206 | 7.57 207 | 10.00000 | 10 |
| **3 0** | 6. 94 085 | 6. 94 085 | 10.00000 | **0 57** | **13 0** | 7.57 767 | 7.57 767 | 10.00000 | **0 47** |
| 10 | 6. 96 433 | 6. 96 433 | 10.00000 | 50 | 10 | 7.58 320 | 7.58 320 | 10.00000 | 50 |
| 20 | 6. 98 660 | 6. 98 661 | 10.00000 | 40 | 20 | 7.58 866 | 7.58 867 | 10.00000 | 40 |
| 30 | 7. 00 779 | 7. 00 779 | 10.00000 | 30 | 30 | 7.59 406 | 7.59 406 | 10.00000 | 30 |
| 40 | 7. 02 800 | 7. 02 800 | 10.00000 | 20 | 40 | 7.59 939 | 7.59 939 | 10.00000 | 20 |
| 50 | 7. 04 730 | 7. 04 730 | 10.00000 | 10 | 50 | 7.60 465 | 7.60 466 | 10.00000 | 10 |
| **4 0** | 7. 06 579 | 7. 06 579 | 10.00000 | **0 56** | **14 0** | 7.60 985 | 7.60 986 | 10.00000 | **0 46** |
| 10 | 7. 08 351 | 7. 08 352 | 10.00000 | 50 | 10 | 7.61 499 | 7.61 500 | 10.00000 | 50 |
| 20 | 7. 10 055 | 7. 10 055 | 10.00000 | 40 | 20 | 7.62 007 | 7.62 008 | 10.00000 | 40 |
| 30 | 7. 11 694 | 7. 11 694 | 10.00000 | 30 | 30 | 7.62 509 | 7.62 510 | 10.00000 | 30 |
| 40 | 7. 13 273 | 7. 13 273 | 10.00000 | 20 | 40 | 7.63 006 | 7.63 006 | 10.00000 | 20 |
| 50 | 7. 14 797 | 7. 14 797 | 10.00000 | 10 | 50 | 7.63 496 | 7.63 497 | 10.00000 | 10 |
| **5 0** | 7. 16 270 | 7. 16 270 | 10.00000 | **0 55** | **15 0** | 7.63 982 | 7.63 982 | 10.00000 | **0 45** |
| 10 | 7. 17 694 | 7. 17 694 | 10.00000 | 50 | 10 | 7.64 461 | 7.64 462 | 10.00000 | 50 |
| 20 | 7. 19 072 | 7. 19 073 | 10.00000 | 40 | 20 | 7.64 936 | 7.64 937 | 10.00000 | 40 |
| 30 | 7. 20 409 | 7. 20 409 | 10.00000 | 30 | 30 | 7.65 406 | 7.65 406 | 10.00000 | 30 |
| 40 | 7. 21 705 | 7. 21 705 | 10.00000 | 20 | 40 | 7.65 870 | 7.65 871 | 10.00000 | 20 |
| 50 | 7. 22 964 | 7. 22 964 | 10.00000 | 10 | 50 | 7.66 330 | 7.66 330 | 10.00000 | 10 |
| **6 0** | 7. 24 188 | 7. 24 188 | 10.00000 | **0 54** | **16 0** | 7.66 784 | 7.66 785 | 10.00000 | **0 44** |
| 10 | 7. 25 378 | 7. 25 378 | 10.00000 | 50 | 10 | 7.67 235 | 7.67 235 | 10.00000 | 50 |
| 20 | 7. 26 536 | 7. 26 536 | 10.00000 | 40 | 20 | 7.67 680 | 7.67 680 | 10.00000 | 40 |
| 30 | 7. 27 664 | 7. 27 664 | 10.00000 | 30 | 30 | 7.68 121 | 7.68 121 | 10.00000 | 30 |
| 40 | 7. 28 763 | 7. 28 764 | 10.00000 | 20 | 40 | 7.68 557 | 7.68 558 | 9.99999 | 20 |
| 50 | 7. 29 836 | 7. 29 836 | 10.00000 | 10 | 50 | 7.68 989 | 7.68 990 | 9.99999 | 10 |
| **7 0** | 7. 30 882 | 7. 30 882 | 10.00000 | **0 53** | **17 0** | 7.69 417 | 7.69 418 | 9. 99 999 | **0 43** |
| 10 | 7. 31 904 | 7. 31 904 | 10.00000 | 50 | 10 | 7.69 841 | 7.69 842 | 9. 99 999 | 50 |
| 20 | 7. 32 903 | 7. 32 903 | 10.00000 | 40 | 20 | 7.70 261 | 7.70 261 | 9. 99 999 | 40 |
| 30 | 7. 33 879 | 7. 33 879 | 10.00000 | 30 | 30 | 7.70 676 | 7.70 677 | 9. 99 999 | 30 |
| 40 | 7. 34 833 | 7. 34 833 | 10.00000 | 20 | 40 | 7.71 088 | 7.71 088 | 9. 99 999 | 20 |
| 50 | 7. 35 767 | 7. 35 767 | 10.00000 | 10 | 50 | 7.71 496 | 7.71 496 | 9. 99 999 | 10 |
| **8 0** | 7. 36 682 | 7. 36 682 | 10.00000 | **0 52** | **18 0** | 7.71 900 | 7.71 900 | 9. 99 999 | **0 42** |
| 10 | 7. 37 577 | 7. 37 577 | 10.00000 | 50 | 10 | 7.72 300 | 7.72 301 | 9. 99 999 | 50 |
| 20 | 7. 38 454 | 7. 38 455 | 10.00000 | 40 | 20 | 7.72 697 | 7.72 697 | 9. 99 999 | 40 |
| 30 | 7. 39 314 | 7. 39 315 | 10.00000 | 30 | 30 | 7.73 090 | 7.73 090 | 9. 99 999 | 30 |
| 40 | 7. 40 158 | 7. 40 158 | 10.00000 | 20 | 40 | 7.73 479 | 7.73 480 | 9. 99 999 | 20 |
| 50 | 7. 40 985 | 7. 40 985 | 10.00000 | 10 | 50 | 7.73 865 | 7.73 866 | 9. 99 999 | 10 |
| **9 0** | 7. 41 797 | 7. 41 797 | 10.00000 | **0 51** | **19 0** | 7.74 248 | 7.74 248 | 9. 99 999 | **0 41** |
| 10 | 7. 42 594 | 7. 42 594 | 10.00000 | 50 | 10 | 7.74 627 | 7.74 628 | 9. 99 999 | 50 |
| 20 | 7. 43 376 | 7. 43 376 | 10.00000 | 40 | 20 | 7.75 003 | 7.75 004 | 9. 99 999 | 40 |
| 30 | 7. 44 145 | 7. 44 145 | 10.00000 | 30 | 30 | 7.75 376 | 7.75 377 | 9. 99 999 | 30 |
| 40 | 7. 44 900 | 7. 44 900 | 10.00000 | 20 | 40 | 7.75 745 | 7.75 746 | 9. 99 999 | 20 |
| 50 | 7. 45 643 | 7. 45 643 | 10.00000 | 10 | 50 | 7.76 112 | 7.76 113 | 9. 99 999 | 10 |
| **10 0** | 7. 46 373 | 7. 46 373 | 10.00000 | **0 50** | **20 0** | 7.76 475 | 7.76 476 | 9. 99 999 | **0 40** |
| ′ ″ | log cos | log cot | log sin | ″ ′ | ′ ″ | log cos | log cot | log sin | ″ ′ |

| ′ ″ | log sin | log tan | log cos | ″ ′ | ′ ″ | log sin | log tan | log cos | ″ ′ |
|---|---|---|---|---|---|---|---|---|---|
| 20 0 | 7.76 475 | 7.76 476 | 9.99 999 | 0 40 | 30 0 | 7.94 084 | 7.94 086 | 9.99 998 | 0 30 |
| 10 | 7.76 836 | 7.76 837 | 9.99 999 | 50 | 10 | 7.94 325 | 7.94 326 | 9.99 998 | 50 |
| 20 | 7.77 193 | 7.77 194 | 9.99 999 | 40 | 20 | 7.94 564 | 7.94 566 | 9.99 998 | 40 |
| 30 | 7.77 548 | 7.77 549 | 9.99 999 | 30 | 30 | 7.94 802 | 7.94 804 | 9.99 998 | 30 |
| 40 | 7.77 899 | 7.77 900 | 9.99 999 | 20 | 40 | 7.95 039 | 7.95 040 | 9.99 998 | 20 |
| 50 | 7.78 248 | 7.78 249 | 9.99 999 | 10 | 50 | 7.95 274 | 7.95 276 | 9.99 998 | 10 |
| 21 0 | 7.78 594 | 7.78 595 | 9.99 999 | 0 39 | 31 0 | 7.95 508 | 7.95 510 | 9.99 998 | 0 29 |
| 10 | 7.78 938 | 7.78 938 | 9.99 999 | 50 | 10 | 7.95 741 | 7.95 743 | 9.99 998 | 50 |
| 20 | 7.79 278 | 7.79 279 | 9.99 999 | 40 | 20 | 7.95 973 | 7.95 974 | 9.99 998 | 40 |
| 30 | 7.79 616 | 7.79 617 | 9.99 999 | 30 | 30 | 7.96 203 | 7.96 205 | 9.99 998 | 30 |
| 40 | 7.79 952 | 7.79 952 | 9.99 999 | 20 | 40 | 7.96 432 | 7.96 434 | 9.99 998 | 20 |
| 50 | 7.80 284 | 7.80 285 | 9.99 999 | 10 | 50 | 7.96 660 | 7.96 662 | 9.99 998 | 10 |
| 22 0 | 7.80 615 | 7.80 615 | 9.99 999 | 0 38 | 32 0 | 7.96 887 | 7.96 889 | 9.99 998 | 0 28 |
| 10 | 7.80 942 | 7.80 943 | 9.99 999 | 50 | 10 | 7.97 113 | 7.97 114 | 9.99 998 | 50 |
| 20 | 7.81 268 | 7.81 269 | 9.99 999 | 40 | 20 | 7.97 337 | 7.97 339 | 9.99 998 | 40 |
| 30 | 7.81 591 | 7.81 591 | 9.99 999 | 30 | 30 | 7.97 560 | 7.97 562 | 9.99 998 | 30 |
| 40 | 7.81 911 | 7.81 912 | 9.99 999 | 20 | 40 | 7.97 782 | 7.97 784 | 9.99 998 | 20 |
| 50 | 7.82 229 | 7.82 230 | 9.99 999 | 10 | 50 | 7.98 003 | 7.98 005 | 9.99 998 | 10 |
| 23 0 | 7.82 545 | 7.82 546 | 9.99 999 | 0 37 | 33 0 | 7.98 223 | 7.98 225 | 9.99 998 | 0 27 |
| 10 | 7.82 859 | 7.82 860 | 9.99 999 | 50 | 10 | 7.98 442 | 7.98 444 | 9.99 998 | 50 |
| 20 | 7.83 170 | 7.83 171 | 9.99 999 | 40 | 20 | 7.98 660 | 7.98 662 | 9.99 998 | 40 |
| 30 | 7.83 479 | 7.83 480 | 9.99 999 | 30 | 30 | 7.98 876 | 7.98 878 | 9.99 998 | 30 |
| 40 | 7.83 786 | 7.83 787 | 9.99 999 | 20 | 40 | 7.99 092 | 7.99 094 | 9.99 998 | 20 |
| 50 | 7.84 091 | 7.84 092 | 9.99 999 | 10 | 50 | 7.99 306 | 7.99 308 | 9.99 998 | 10 |
| 24 0 | 7.84 393 | 7.84 394 | 9.99 999 | 0 36 | 34 0 | 7.99 520 | 7.99 522 | 9.99 998 | 0 26 |
| 10 | 7.84 694 | 7.84 695 | 9.99 999 | 50 | 10 | 7.99 732 | 7.99 734 | 9.99 998 | 50 |
| 20 | 7.84 992 | 7.84 994 | 9.99 999 | 40 | 20 | 7.99 943 | 7.99 946 | 9.99 998 | 40 |
| 30 | 7.85 289 | 7.85 290 | 9.99 999 | 30 | 30 | 8.00 154 | 8.00 156 | 9.99 998 | 30 |
| 40 | 7.85 583 | 7.85 585 | 9.99 999 | 20 | 40 | 8.00 363 | 8.00 365 | 9.99 998 | 20 |
| 50 | 7.85 876 | 7.85 877 | 9.99 999 | 10 | 50 | 8.00 571 | 8.00 574 | 9.99 998 | 10 |
| 25 0 | 7.86 166 | 7.86 167 | 9.99 999 | 0 35 | 35 0 | 8.00 779 | 8.00 781 | 9.99 998 | 0 25 |
| 10 | 7.86 455 | 7.86 456 | 9.99 999 | 50 | 10 | 8.00 985 | 8.00 987 | 9.99 998 | 50 |
| 20 | 7.86 741 | 7.86 743 | 9.99 999 | 40 | 20 | 8.01 190 | 8.01 193 | 9.99 998 | 40 |
| 30 | 7.87 026 | 7.87 027 | 9.99 999 | 30 | 30 | 8.01 395 | 8.01 397 | 9.99 998 | 30 |
| 40 | 7.87 309 | 7.87 310 | 9.99 999 | 20 | 40 | 8.01 598 | 8.01 600 | 9.99 998 | 20 |
| 50 | 7.87 590 | 7.87 591 | 9.99 999 | 10 | 50 | 8.01 801 | 8.01 803 | 9.99 998 | 10 |
| 26 0 | 7.87 870 | 7.87 871 | 9.99 999 | 0 34 | 36 0 | 8.02 002 | 8.02 004 | 9.99 998 | 0 24 |
| 10 | 7.88 147 | 7.88 148 | 9.99 999 | 50 | 10 | 8.02 203 | 8.02 205 | 9.99 998 | 50 |
| 20 | 7.88 423 | 7.88 424 | 9.99 999 | 40 | 20 | 8.02 402 | 8.02 405 | 9.99 998 | 40 |
| 30 | 7.88 697 | 7.88 698 | 9.99 999 | 30 | 30 | 8.02 601 | 8.02 604 | 9.99 998 | 30 |
| 40 | 7.88 969 | 7.88 970 | 9.99 999 | 20 | 40 | 8.02 799 | 8.02 801 | 9.99 998 | 20 |
| 50 | 7.89 240 | 7.89 241 | 9.99 999 | 10 | 50 | 8.02 996 | 8.02 998 | 9.99 998 | 10 |
| 27 0 | 7.89 509 | 7.89 510 | 9.99 999 | 0 33 | 37 0 | 8.03 192 | 8.03 194 | 9.99 997 | 0 23 |
| 10 | 7.89 776 | 7.89 777 | 9.99 999 | 50 | 10 | 8.03 387 | 8.03 390 | 9.99 997 | 50 |
| 20 | 7.90 041 | 7.90 043 | 9.99 999 | 40 | 20 | 8.03 581 | 8.03 584 | 9.99 997 | 40 |
| 30 | 7.90 305 | 7.90 307 | 9.99 999 | 30 | 30 | 8.03 775 | 8.03 777 | 9.99 997 | 30 |
| 40 | 7.90 568 | 7.90 569 | 9.99 999 | 20 | 40 | 8.03 967 | 8.03 970 | 9.99 997 | 20 |
| 50 | 7.90 829 | 7.90 830 | 9.99 999 | 10 | 50 | 8.04 159 | 8.04 162 | 9.99 997 | 10 |
| 28 0 | 7.91 088 | 7.91 089 | 9.99 999 | 0 32 | 38 0 | 8.04 350 | 8.04 353 | 9.99 997 | 0 22 |
| 10 | 7.91 346 | 7.91 347 | 9.99 999 | 50 | 10 | 8.04 540 | 8.04 543 | 9.99 997 | 50 |
| 20 | 7.91 602 | 7.91 603 | 9.99 999 | 40 | 20 | 8.04 729 | 8.04 732 | 9.99 997 | 40 |
| 30 | 7.91 857 | 7.91 858 | 9.99 999 | 30 | 30 | 8.04 918 | 8.04 921 | 9.99 997 | 30 |
| 40 | 7.92 110 | 7.92 111 | 9.99 998 | 20 | 40 | 8.05 105 | 8.05 108 | 9.99 997 | 20 |
| 50 | 7.92 362 | 7.92 363 | 9.99 998 | 10 | 50 | 8.05 292 | 8.05 295 | 9.99 997 | 10 |
| 29 0 | 7.92 612 | 7.92 613 | 9.99 998 | 0 31 | 39 0 | 8.05 478 | 8.05 481 | 9.99 997 | 0 21 |
| 10 | 7.92 861 | 7.92 862 | 9.99 998 | 50 | 10 | 8.05 663 | 8.05 666 | 9.99 997 | 50 |
| 20 | 7.93 108 | 7.93 110 | 9.99 998 | 40 | 20 | 8.05 848 | 8.05 851 | 9.99 997 | 40 |
| 30 | 7.93 354 | 7.93 356 | 9.99 998 | 30 | 30 | 8.06 031 | 8.06 034 | 9.99 997 | 30 |
| 40 | 7.93 599 | 7.93 601 | 9.99 998 | 20 | 40 | 8.06 214 | 8.06 217 | 9.99 997 | 20 |
| 50 | 7.93 842 | 7.93 844 | 9.99 998 | 10 | 50 | 8.06 396 | 8.06 399 | 9.99 997 | 10 |
| 30 0 | 7.94 084 | 7.94 086 | 9.99 998 | 0 30 | 40 0 | 8.06 578 | 8.06 581 | 9.99 997 | 0 20 |
| ′ ″ | log cos | log cot | log sin | ″ ′ | ′ ″ | log cos | log cot | log sin | ″ ′ |

**0°**

| ′ ′′ | log sin | log tan | log cos | ′′ ′ | ′ ′′ | log sin | log tan | log cos | ′′ ′ |
|---|---|---|---|---|---|---|---|---|---|
| **40 0** | 8.06 578 | 8.06 581 | 9.99 997 | **0 20** | **50 0** | 8.16 268 | 8.16 273 | 9.99 995 | **0 10** |
| 10 | 8.06 758 | 8.06 761 | 9.99 997 | 50 | 10 | 8.16 413 | 8.16 417 | 9.99 995 | 50 |
| 20 | 8.06 938 | 8.06 941 | 9.99 997 | 40 | 20 | 8.16 557 | 8.16 561 | 9.99 995 | 40 |
| 30 | 8.07 117 | 8.07 120 | 9.99 997 | 30 | 30 | 8.16 700 | 8.16 705 | 9.99 995 | 30 |
| 40 | 8.07 295 | 8.07 299 | 9.99 997 | 20 | 40 | 8.16 843 | 8.16 848 | 9.99 995 | 20 |
| 50 | 8.07 473 | 8.07 476 | 9.99 997 | 10 | 50 | 8.16 986 | 8.16 991 | 9.99 995 | 10 |
| **41 0** | 8.07 650 | 8.07 653 | 9.99 997 | **0 19** | **51 0** | 8.17 128 | 8.17 133 | 9.99 995 | **0 9** |
| 10 | 8.07 826 | 8.07 829 | 9.99 997 | 50 | 10 | 8.17 270 | 8.17 275 | 9.99 995 | 50 |
| 20 | 8.08 002 | 8.08 005 | 9.99 997 | 40 | 20 | 8.17 411 | 8.17 416 | 9.99 995 | 40 |
| 30 | 8.08 176 | 8.08 180 | 9.99 997 | 30 | 30 | 8.17 552 | 8.17 557 | 9.99 995 | 30 |
| 40 | 8.08 350 | 8.08 354 | 9.99 997 | 20 | 40 | 8.17 692 | 8.17 697 | 9.99 995 | 20 |
| 50 | 8.08 524 | 8.08 527 | 9.99 997 | 10 | 50 | 8.17 832 | 8.17 837 | 9.99 995 | 10 |
| **42 0** | 8.08 696 | 8.08 700 | 9.99 997 | **0 18** | **52 0** | 8.17 971 | 8.17 976 | 9.99 995 | **0 8** |
| 10 | 8.08 868 | 8.08 872 | 9.99 997 | 50 | 10 | 8.18 110 | 8.18 115 | 9.99 995 | 50 |
| 20 | 8.09 040 | 8.09 043 | 9.99 997 | 40 | 20 | 8.18 249 | 8.18 254 | 9.99 995 | 40 |
| 30 | 8.09 210 | 8.09 214 | 9.99 997 | 30 | 30 | 8.18 387 | 8.18 392 | 9.99 995 | 30 |
| 40 | 8.09 380 | 8.09 384 | 9.99 997 | 20 | 40 | 8.18 524 | 8.18 530 | 9.99 995 | 20 |
| 50 | 8.09 550 | 8.09 553 | 9.99 997 | 10 | 50 | 8.18 662 | 8.18 667 | 9.99 995 | 10 |
| **43 0** | 8.09 718 | 8.09 722 | 9.99 997 | **0 17** | **53 0** | 8.18 798 | 8.18 804 | 9.99 995 | **0 7** |
| 10 | 8.09 886 | 8.09 890 | 9.99 997 | 50 | 10 | 8.18 935 | 8.18 940 | 9.99 995 | 50 |
| 20 | 8.10 054 | 8.10 057 | 9.99 997 | 40 | 20 | 8.19 071 | 8.19 076 | 9.99 995 | 40 |
| 30 | 8.10 220 | 8.10 224 | 9.99 997 | 30 | 30 | 8.19 206 | 8.19 212 | 9.99 995 | 30 |
| 40 | 8.10 386 | 8.10 390 | 9.99 997 | 20 | 40 | 8.19 341 | 8.19 347 | 9.99 995 | 20 |
| 50 | 8.10 552 | 8.10 555 | 9.99 996 | 10 | 50 | 8.19 476 | 8.19 481 | 9.99 995 | 10 |
| **44 0** | 8.10 717 | 8.10 720 | 9.99 996 | **0 16** | **54 0** | 8.19 610 | 8.19 616 | 9.99 995 | **0 6** |
| 10 | 8.10 881 | 8.10 884 | 9.99 996 | 50 | 10 | 8.19 744 | 8.19 749 | 9.99 995 | 50 |
| 20 | 8.11 044 | 8.11 048 | 9.99 996 | 40 | 20 | 8.19 877 | 8.19 883 | 9.99 995 | 40 |
| 30 | 8.11 207 | 8.11 211 | 9.99 996 | 30 | 30 | 8.20 010 | 8.20 016 | 9.99 995 | 30 |
| 40 | 8.11 370 | 8.11 373 | 9.99 996 | 20 | 40 | 8.20 143 | 8.20 149 | 9.99 995 | 20 |
| 50 | 8.11 531 | 8.11 535 | 9.99 996 | 10 | 50 | 8.20 275 | 8.20 281 | 9.99 994 | 10 |
| **45 0** | 8.11 693 | 8.11 696 | 9.99 996 | **0 15** | **55 0** | 8.20 407 | 8.20 413 | 9.99 994 | **0 5** |
| 10 | 8.11 853 | 8.11 857 | 9.99 996 | 50 | 10 | 8.20 538 | 8.20 544 | 9.99 994 | 50 |
| 20 | 8.12 013 | 8.12 017 | 9.99 996 | 40 | 20 | 8.20 669 | 8.20 675 | 9.99 994 | 40 |
| 30 | 8.12 172 | 8.12 176 | 9.99 996 | 30 | 30 | 8.20 800 | 8.20 806 | 9.99 994 | 30 |
| 40 | 8.12 331 | 8.12 335 | 9.99 996 | 20 | 40 | 8.20 930 | 8.20 936 | 9.99 994 | 20 |
| 50 | 8.12 489 | 8.12 493 | 9.99 996 | 10 | 50 | 8.21 060 | 8.21 066 | 9.99 994 | 10 |
| **46 0** | 8.12 647 | 8.12 651 | 9.99 996 | **0 14** | **56 0** | 8.21 189 | 8.21 195 | 9.99 994 | **0 4** |
| 10 | 8.12 804 | 8.12 808 | 9.99 996 | 50 | 10 | 8.21 319 | 8.21 324 | 9.99 994 | 50 |
| 20 | 8.12 961 | 8.12 965 | 9.99 996 | 40 | 20 | 8.21 447 | 8.21 453 | 9.99 994 | 40 |
| 30 | 8.13 117 | 8.13 121 | 9.99 996 | 30 | 30 | 8.21 576 | 8.21 581 | 9.99 994 | 30 |
| 40 | 8.13 272 | 8.13 276 | 9.99 996 | 20 | 40 | 8.21 703 | 8.21 709 | 9.99 944 | 20 |
| 50 | 8.13 427 | 8.13 431 | 9.99 996 | 10 | 50 | 8.21 831 | 8.21 837 | 9.99 994 | 10 |
| **47 0** | 8.13 581 | 8.13 585 | 9.99 996 | **0 13** | **57 0** | 8.21 958 | 8.21 964 | 9.99 994 | **0 3** |
| 10 | 8.13 735 | 8.13 739 | 9.99 996 | 50 | 10 | 8.22 085 | 8.22 091 | 9.99 994 | 50 |
| 20 | 8.13 888 | 8.13 892 | 9.99 996 | 40 | 20 | 8.22 211 | 8.22 217 | 9.99 994 | 40 |
| 30 | 8.14 041 | 8.14 045 | 9.99 996 | 30 | 30 | 8.22 337 | 8.22 343 | 9.99 994 | 30 |
| 40 | 8.14 193 | 8.14 197 | 9.99 996 | 20 | 40 | 8.22 463 | 8.22 469 | 9.99 994 | 20 |
| 50 | 8.14 344 | 8.14 348 | 9.99 996 | 10 | 50 | 8.22 588 | 8.22 595 | 9.99 994 | 10 |
| **48 0** | 8.14 495 | 8.14 500 | 9.99 996 | **0 12** | **58 0** | 8.22 713 | 8.22 720 | 9.99 994 | **0 2** |
| 10 | 8.14 646 | 8.14 650 | 9.99 996 | 50 | 10 | 8.22 838 | 8.22 844 | 9.99 994 | 50 |
| 20 | 8.14 796 | 8.14 800 | 9.99 996 | 40 | 20 | 8.22 962 | 8.22 968 | 9.99 994 | 40 |
| 30 | 8.14 945 | 8.14 950 | 9.99 996 | 30 | 30 | 8.23 086 | 8.23 092 | 9.99 994 | 30 |
| 40 | 8.15 094 | 8.15 099 | 9.99 996 | 20 | 40 | 8.23 210 | 8.23 216 | 9.99 994 | 20 |
| 50 | 8.15 243 | 8.15 247 | 9.99 996 | 10 | 50 | 8.23 333 | 8.23 339 | 9.99 994 | 10 |
| **49 0** | 8.15 391 | 8.15 395 | 9.99 996 | **0 11** | **59 0** | 8.23 456 | 8.23 462 | 9.99 994 | **0 1** |
| 10 | 8.15 538 | 8.15 543 | 9.99 996 | 50 | 10 | 8.23 578 | 8.23 585 | 9.99 994 | 50 |
| 20 | 8.15 685 | 8.15 690 | 9.99 996 | 40 | 20 | 8.23 700 | 8.23 707 | 9.99 994 | 40 |
| 30 | 8.15 832 | 8.15 836 | 9.99 996 | 30 | 30 | 8.23 822 | 8.23 829 | 9.99 993 | 30 |
| 40 | 8.15 978 | 8.15 982 | 9.99 995 | 20 | 40 | 8.23 944 | 8.23 950 | 9.99 993 | 20 |
| 50 | 8.16 123 | 8.16 128 | 9.99 995 | 10 | 50 | 8.24 065 | 8.24 071 | 9.99 993 | 10 |
| **50 0** | 8.16 268 | 8.16 273 | 9.99 995 | **0 10** | **60 0** | 8.24 186 | 8.24 192 | 9.99 993 | **0 0** |
| ′ ′′ | log cos | log cot | log sin | ′′ ′ | ′ ′′ | log cos | log cot | log sin | ′′ ′ |

**89°**

| ′ ″ | log sin | log tan | log cos | ″ ′ | ′ ″ | log sin | log tan | log cos | ″ ′ |
|---|---|---|---|---|---|---|---|---|---|
| **0  0** | 8.24 186 | 8.24 192 | 9.99 993 | **0 60** | **10  0** | 8.30 879 | 8.30 888 | 9.99 991 | **0 50** |
| 10 | 8.24 306 | 8.24 313 | 9.99 993 | 50 | 10 | 8.30 983 | 8.30 992 | 9.99 991 | 50 |
| 20 | 8.24 426 | 8.24 433 | 9.99 993 | 40 | 20 | 8.31 086 | 8.31 095 | 9.99 991 | 40 |
| 30 | 8.24 546 | 8.24 553 | 9.99 993 | 30 | 30 | 8.31 188 | 8.31 198 | 9.99 991 | 30 |
| 40 | 8.24 665 | 8.24 672 | 9.99 993 | 20 | 40 | 8.31 291 | 8.31 300 | 9.99 991 | 20 |
| 50 | 8.24 785 | 8.24 791 | 9.99 993 | 10 | 50 | 8.31 393 | 8.31 403 | 9.99 991 | 10 |
| **1  0** | 8.24 903 | 8.24 910 | 9.99 993 | **0 59** | **11  0** | 8.31 495 | 8.31 505 | 9.99 991 | **0 49** |
| 10 | 8.25 022 | 8.25 029 | 9.99 993 | 50 | 10 | 8.31 597 | 8.31 606 | 9.99 991 | 50 |
| 20 | 8.25 140 | 8.25 147 | 9.99 993 | 40 | 20 | 8.31 699 | 8.31 708 | 9.99 991 | 40 |
| 30 | 8.25 258 | 8.25 265 | 9.99 993 | 30 | 30 | 8.31 800 | 8.31 809 | 9.99 991 | 30 |
| 40 | 8.25 375 | 8.25 382 | 9.99 993 | 20 | 40 | 8.31 901 | 8.31 911 | 9.99 991 | 20 |
| 50 | 8.25 493 | 8.25 500 | 9.99 993 | 10 | 50 | 8.32 002 | 8.32 012 | 9.99 991 | 10 |
| **2  0** | 8.25 609 | 8.25 616 | 9.99 993 | **0 58** | **12  0** | 8.32 103 | 8.32 112 | 9.99 990 | **0 48** |
| 10 | 8.25 726 | 8.25 733 | 9.99 993 | 50 | 10 | 8.32 203 | 8.32 213 | 9.99 990 | 50 |
| 20 | 8.25 842 | 8.25 849 | 9.99 993 | 40 | 20 | 8.32 303 | 8.32 313 | 9.99 990 | 40 |
| 30 | 8.25 958 | 8.25 965 | 9.99 993 | 30 | 30 | 8.32 403 | 8.32 413 | 9.99 990 | 30 |
| 40 | 8.26 074 | 8.26 081 | 9.99 993 | 20 | 40 | 8.32 503 | 8.32 513 | 9.99 990 | 20 |
| 50 | 8.26 189 | 8.26 196 | 9.99 993 | 10 | 50 | 8.32 602 | 8.32 612 | 9.99 990 | 10 |
| **3  0** | 8.26 304 | 8.26 312 | 9.99 993 | **0 57** | **13  0** | 8.32 702 | 8.32 711 | 9.99 990 | **0 47** |
| 10 | 8.26 419 | 8.26 426 | 9.99 993 | 50 | 10 | 8.32 801 | 8.32 811 | 9.99 990 | 50 |
| 20 | 8.26 533 | 8.26 541 | 9.99 993 | 40 | . 20 | 8.32 899 | 8.32 909 | 9.99 990 | 40 |
| 30 | 8.26 648 | 8.26 655 | 9.99 993 | 30 | 30 | 8.32 998 | 8.33 008 | 9.99 990 | 30 |
| 40 | 8.26 761 | 8.26 769 | 9.99 993 | 20 | 40 | 8.33 096 | 8.33 106 | 9.99 990 | 20 |
| ′ 50 | 8.26 875 | 8.26 882 | 9.99 993 | 10 | 50 | 8.33 195 | 8.33 205 | 9.99 990 | 10 |
| **4  0** | 8.26 988 | 8.26 996 | 9.99 992 | **0 56** | **14  0** | 8.33 292 | 8.33 302 | 9.99 990 | **0 46** |
| 10 | 8.27 101 | 8.27 109 | 9.99 992 | 50 | 10 | 8.33 390 | 8.33 400 | 9.99 990 | 50 |
| 20 | 8.27 214 | 8.27 221 | 9.99 992 | 40 | 20 | 8.33 488 | 8.33 498 | 9.99 990 | 40 |
| 30 | 8.27 326 | 8.27 334 | 9.99 992 | 30 | 30 | 8.33 585 | 8.33 595 | 9.99 990 | 30 |
| 40 | 8.27 438 | 8.27 446 | 9.99 992 | 20 | 40 | 8.33 682 | 8.33 692 | 9.99 990 | 20 |
| 50 | 8.27 550 | 8.27 558 | 9.99 992 | 10 | 50 | 8.33 779 | 8.33 789 | 9.99 990 | 10 |
| **5  0** | 8.27 661 | 8.27 669 | 9.99 992 | **0 55** | **15  0** | 8.33 875 | 8.33 886 | 9.99 990 | **0 45** |
| 10 | 8.27 773 | 8.27 780 | 9.99 992 | 50 | 10 | 8.33 972 | 8.33 982 | 9.99 990 | 50 |
| 20 | 8.27 883 | 8.27 891 | 9.99 992 | 40 | 20 | 8.34 068 | 8.34 078 | 9.99 990 | 40 |
| 30 | 8.27 994 | 8.28 002 | 9.99 992 | 30 | 30 | 8.34 164 | 8.34 174 | 9.99 990 | 30 |
| 40 | 8.28 104 | 8.28 112 | 9.99 992 | 20 | 40 | 8.34 260 | 8.34 270 | 9.99 989 | 20 |
| 50 | 8.28 215 | 8.28 223 | 9.99 992 | 10 | 50 | 8.34 355 | 8.34 366 | 9.99 989 | 10 |
| **6  0** | 8.28 324 | 8.28 332 | 9.99 992 | **0 54** | **16  0** | 8.34 450 | 8.34 461 | 9.99 989 | **0 44** |
| 10 | 8.28 434 | 8.28 442 | 9.99 992 | 50 | 10 | 8.34 546 | 8.34 556 | 9.99 989 | 50 |
| 20 | 8.28 543 | 8.28 551 | 9.99 992 | 40 | 20 | 8.34 640 | 8.34 651 | 9.99 989 | 40 |
| 30 | 8.28 652 | 8.28 660 | 9.99 992 | 30 | 30 | 8.34 735 | 8.34 746 | 9.99 989 | 30 |
| 40 | 8.28 761 | 8.28 769 | 9.99 992 | 20 | 40 | 8.34 830 | 8.34 840 | 9.99 989 | 20 |
| 50 | 8.28 869 | 8.28 877 | 9.99 992 | 10 | 50 | 8.34 924 | 8.34 935 | 9.99 989 | 10 |
| **7  0** | 8.28 977 | 8.28 986 | 9.99 992 | **0 53** | **17  0** | 8.35 018 | 8.35 029 | 9.99 989 | **0 43** |
| 10 | 8.29 085 | 8.29 094 | 9.99 992 | 50 | 10 | 8.35 112 | 8.35 123 | 9.99 989 | 50 |
| 20 | 8.29 193 | 8.29 201 | 9.99 992 | 40 | 20 | 8.35 206 | 8.35 217 | 9.99 989 | 40 |
| 30 | 8.29 300 | 8.29 309 | 9.99 992 | 30 | 30 | 8.35 299 | 8.35 310 | 9.99 989 | 30 |
| 40 | 8.29 407 | 8.29 416 | 9.99 992 | 20 | 40 | 8.35 392 | 8.35 403 | 9.99 989 | 20 |
| 50 | 8.29 514 | 8.29 523 | 9.99 992 | 10 | 50 | 8.35 485 | 8.35 497 | 9.99 989 | 10 |
| **8  0** | 8.29 621 | 8.29 629 | 9.99 992 | **0 52** | **18  0** | 8.35 578 | 8.35 590 | 9.99 989 | **0 42** |
| 10 | 8.29 727 | 8.29 736 | 9.99 991 | 50 | 10 | 8.35 671 | 8.35 682 | 9.99 989 | 50 |
| 20 | 8.29 833 | 8.29 842 | 9.99 991 | 40 | 20 | 8.35 764 | 8.35 775 | 9.99 989 | 40 |
| 30 | 8.29 939 | 8.29 947 | 9.99 991 | 30 | 30 | 8.35 856 | 8.35 867 | 9.99 989 | 30 |
| 40 | 8.30 044 | 8.30 053 | 9.99 991 | 20 | 40 | 8.35 948 | 8.35 959 | 9.99 989 | 20 |
| 50 | 8.30 150 | 8.30 158 | 9.99 991 | 10 | 50 | 8.36 040 | 8.36 051 | 9.99 989 | 10 |
| **9  0** | 8.30 255 | 8.30 263 | 9.99 991 | **0 51** | **19  0** | 8.36 131 | 8.36 143 | 9.99 989 | **0 41** |
| 10 | 8.30 359 | 8.30 368 | 9.99 991 | 50 | 10 | 8.36 223 | 8.36 235 | 9.99 988 | 50 |
| 20 | 8.30 464 | 8.30 473 | 9.99 991 | 40 | 20 | 8.36 314 | 8.36 326 | 9.99 988 | 40 |
| 30 | 8.30 568 | 8.30 577 | 9.99 991 | 30 | 30 | 8.36 405 | 8.36 417 | 9.99 988 | 30 |
| 40 | 8.30 672 | 8.30 681 | 9.99 991 | 20 | 40 | 8.36 496 | 8.36 508 | 9.99 988 | 20 |
| 50 | 8.30 776 | 8.30 785 | 9.99 991 | 10 | 50 | 8.36 587 | 8.36 599 | 9.99 988 | 10 |
| **10 0** | 8.30 879 | 8.30 888 | 9.99 991 | **0 50** | **20  0** | 8.36 678 | 8.36 689 | 9.99 988 | **0 40** |
| ′ ″ | log cos | log cot | log sin | ″ ′ | ′ ″ | log cos | log cot | log sin | ″ ′ |

| ′ ″ | log sin | log tan | log oos | ″ ′ | ′ ″ | log sin | log tan | log oos | ″ ′ |
|---|---|---|---|---|---|---|---|---|---|
| **20** 0 | 8.36 678 | 8.36 689 | 9.99 988 | 0 **40** | **30** 0 | 8.41 792 | 8.41 807 | 9.99 985 | 0 **30** |
| 10 | 8.36 768 | 8.36 780 | 9.99 988 | 50 | 10 | 8.41 872 | 8.41 887 | 9.99 985 | 50 |
| 20 | 8.36 858 | 8.36 870 | 9.99 988 | 40 | 20 | 8.41 952 | 8.41 967 | 9.99 985 | 40 |
| 30 | 8.36 948 | 8.36 960 | 9.99 988 | 30 | 30 | 8.42 032 | 8.42 048 | 9.99 985 | 30 |
| 40 | 8.37 038 | 8.37 050 | 9.99 988 | 20 | 40 | 8.42 112 | 8.42 127 | 9.99 985 | 20 |
| 50 | 8.37 128 | 8.37 140 | 9.99 988 | 10 | 50 | 8.42 192 | 8.42 207 | 9.99 985 | 10 |
| **21** 0 | 8.37 217 | 8.37 229 | 9.99 988 | 0 **39** | **31** 0 | 8.42 272 | 8.42 287 | 9.99 985 | 0 **29** |
| 10 | 8.37 306 | 8.37 318 | 9.99 988 | 50 | 10 | 8.42 351 | 8.42 366 | 9.99 985 | 50 |
| 20 | 8.37 395 | 8.37 408 | 9.99 988 | 40 | 20 | 8.42 430 | 8.42 446 | 9.99 985 | 40 |
| 30 | 8.37 484 | 8.37 497 | 9.99 988 | 30 | 30 | 8.42 510 | 8.42 525 | 9.99 985 | 30 |
| 40 | 8.37 573 | 8.37 585 | 9.99 988 | 20 | 40 | 8.42 589 | 8.42 604 | 9.99 985 | 20 |
| 50 | 8.37 662 | 8.37 674 | 9.99 988 | 10 | 50 | 8.42 667 | 8.42 683 | 9.99 985 | 10 |
| **22** 0 | 8.37 750 | 8.37 762 | 9.99 988 | 0 **38** | **32** 0 | 8.42 746 | 8.42 762 | 9.99 984 | 0 **28** |
| 10 | 8.37 838 | 8.37 850 | 9.99 988 | 50 | 10 | 8.42 825 | 8.42 840 | 9.99 984 | 50 |
| 20 | 8.37 926 | 8.37 938 | 9.99 988 | 40 | 20 | 8.42 903 | 8.42 919 | 9.99 984 | 40 |
| 30 | 8.38 014 | 8.38 026 | 9.99 987 | 30 | 30 | 8.42 982 | 8.42 997 | 9.99 984 | 30 |
| 40 | 8.38 101 | 8.38 114 | 9.99 987 | 20 | 40 | 8.43 060 | 8.43 075 | 9.99 984 | 20 |
| 50 | 8.38 189 | 8.38 202 | 9.99 987 | 10 | 50 | 8.43 138 | 8.43 154 | 9.99 984 | 10 |
| **23** 0 | 8.38 276 | 8.38 289 | 9.99 987 | 0 **37** | **33** 0 | 8.43 216 | 8.43 232 | 9.99 984 | 0 **27** |
| 10 | 8.38 363 | 8.38 376 | 9.99 987 | 50 | 10 | 8.43 293 | 8.43 309 | 9.99 984 | 50 |
| 20 | 8.38 450 | 8.38 463 | 9.99 987 | 40. | 20 | 8.43 371 | 8.43 387 | 9.99 984 | 40 |
| 30 | 8.38 537 | 8.38 550 | 9.99 987 | 30 | 30 | 8.43 448 | 8.43 464 | 9.99 984 | 30 |
| 40 | 8.38 624 | 8.38 636 | 9.99 987 | 20 | 40 | 8.43 526 | 8.43 542 | 9.99 984 | 20 |
| 50 | 8.38 710 | 8.38 723 | 9.99 987 | 10 | 50 | 8.43 603 | 8.43 619 | 9.99 984 | 10 |
| **24** 0 | 8.38 796 | 8.38 809 | 9.99 987 | 0 **36** | **34** 0 | 8.43 680 | 8.43 696 | 9.99 984 | 0 **26** |
| 10 | 8.38 882 | 8.38 895 | 9.99 987 | 50 | 10 | 8.43 757 | 8.43 773 | 9.99 984 | 50 |
| 20 | 8.38 968 | 8.38 981 | 9.99 987 | 40 | 20 | 8.43 834 | 8.43 850 | 9.99 984 | 40 |
| 30 | 8.39 054 | 8.39 067 | 9.99 987 | 30 | 30 | 8.43 910 | 8.43 927 | 9.99 984 | 30 |
| 40 | 8.39 139 | 8.39 153 | 9.99 987 | 20 | 40 | 8.43 987 | 8.44 003 | 9.99 984 | 20 |
| 50 | 8.39 225 | 8.39 238 | 9.99 987 | 10 | 50 | 8.44 063 | 8.44 080 | 9.99 983 | 10 |
| **25** 0 | 8.39 310 | 8.39 323 | 9.99 987 | 0 **35** | **35** 0 | 8.44 139 | 8.44 156 | 9.99 983 | 0 **25** |
| 10 | 8.39 395 | 8.39 408 | 9.99 987 | 50 | 10 | 8.44 216 | 8.44 232 | 9.99 983 | 50 |
| 20 | 8.39 480 | 8.39 493 | 9.99 987 | 40 | 20 | 8.44 292 | 8.44 308 | 9.99 983 | 40 |
| 30 | 8.39 565 | 8.39 578 | 9.99 987 | 30 | 30 | 8.44 367 | 8.44 384 | 9.99 983 | 30 |
| 40 | 8.39 649 | 8.39 663 | 9.99 987 | 20 | 40 | 8.44 443 | 8.44 460 | 9.99 983 | 20 |
| 50 | 8.39 734 | 8.39 747 | 9.99 986 | 10 | 50 | 8.44 519 | 8.44 536 | 9.99 983 | 10 |
| **26** 0 | 8.39 818 | 8.39 832 | 9.99 986 | 0 **34** | **36** 0 | 8.44 594 | 8.44 611 | 9.99 983 | 0 **24** |
| 10 | 8.39 902 | 8.39 916 | 9.99 986 | 50 | 10 | 8.44 669 | 8.44 686 | 9.99 983 | 50 |
| 20 | 8.39 986 | 8.40 000 | 9.99 986 | 40 | 20 | 8.44 745 | 8.44 762 | 9.99 983 | 40 |
| 30 | 8.40 070 | 8.40 083 | 9.99 986 | 30 | 30 | 8.44 820 | 8.44 837 | 9.99 983 | 30 |
| 40 | 8.40 153 | 8.4. 167 | 9.99 986 | 20 | 40 | 8.44 895 | 8.44 912 | 9.99 983 | 20 |
| 50 | 8.40 237 | 8.40 251 | 9.99 986 | 10 | 50 | 8.44 969 | 8.44 987 | 9.99 983 | 10 |
| **27** 0 | 8.40 320 | 8.40 334 | 9.99 986 | 0 **33** | **37** 0 | 8.45 044 | 8.45 061 | 9.99 983 | 0 **23** |
| 10 | 8.40 403 | 8.40 417 | 9.99 986 | 50 | 10 | 8.45 119 | 8.45 136 | 9.99 983 | 50 |
| 20 | 8.40 486 | 8.40 500 | 9.99 986 | 40 | 20 | 8.45 193 | 8.45 210 | 9.99 983 | 40 |
| 30 | 8.40 569 | 8.40 583 | 9.99 986 | 30 | 30 | 8.45 267 | 8.45 285 | 9.99 983 | 30 |
| 40 | 8.40 651 | 8.40 665 | 9.99 986 | 20 | 40 | 8.45 341 | 8.45 359 | 9.99 982 | 20 |
| 50 | 8.40 734 | 8.40 748 | 9.99 986 | 10 | 50 | 8.45 415 | 8.45 433 | 9.99 982 | 10 |
| **28** 0 | 8.40 816 | 8.40 830 | 9.99 986 | 0 **32** | **38** 0 | 8.45 489 | 8.45 507 | 9.99 982 | 0 **22** |
| 10 | 8.40 898 | 8.40 913 | 9.99 986 | 50 | 10 | 8.45 563 | 8.45 581 | 9.99 982 | 50 |
| 20 | 8.40 980 | 8.40 995 | 9.99 986 | 40 | 20 | 8.45 637 | 8.45 655 | 9.99 982 | 40 |
| 30 | 8.41 062 | 8.41 077 | 9.99 986 | 30 | 30 | 8.45 710 | 8.45 728 | 9.99 982 | 30 |
| 40 | 8.41 144 | 8.41 158 | 9.99 986 | 20 | 40 | 8.45 784 | 8.45 802 | 9.99 982 | 20 |
| 50 | 8.41 225 | 8.41 240 | 9.99 986 | 10 | 50 | 8.45 857 | 8.45 875 | 9.99 982 | 10 |
| **29** 0 | 8.41 307 | 8.41 321 | 9.99 985 | 0 **31** | **39** 0 | 8.45 930 | 8.45 948 | 9.99 982 | 0 **21** |
| 10 | 8.41 388 | 8.41 403 | 9.99 985 | 50 | 10 | 8.46 003 | 8.46 021 | 9.99 982 | 50 |
| 20 | 8.41 469 | 8.41 484 | 9.99 985 | 40 | 20 | 8.46 076 | 8.46 094 | 9.99 982 | 40 |
| 30 | 8.41 550 | 8.41 565 | 9.99 985 | 30 | 30 | 8.46 149 | 8.46 167 | 9.99 982 | 30 |
| 40 | 8.41 631 | 8.41 646 | 9.99 985 | 20 | 40 | 8.46 222 | 8.46 240 | 9.99 982 | 20 |
| 50 | 8.41 711 | 8.41 726 | 9.99 985 | 10 | 50 | 8.46 294 | 8.46 312 | 9.99 982 | 10 |
| **30** 0 | 8.41 792 | 8.41 807 | 9.99 985 | 0 **30** | **40** 0 | 8.46 366 | 8.46 385 | 9.99 982 | 0 **20** |
| ′ ″ | log oos | log oot | log sin | ″ ′ | ′ ″ | log oos | log oot | log sin | ″ ′ |

| ′ ″ | log sin | log tan | log cos | ″ ′ | ′ ″ | log sin | log tan | log cos | ″ ′ |
|---|---|---|---|---|---|---|---|---|---|
| **40** 0 | 8. 46 366 | 8. 46 385 | 9. 99 982 | 0 **20** | **50** 0 | 8. 50 504 | 8. 50 527 | 9. 99 978 | 0 **10** |
| 10 | 8. 46 439 | 8. 46 457 | 9. 99 982 | 50 | 10 | 8. 50 570 | 8. 50 593 | 9. 99 978 | 50 |
| 20 | 8. 46 511 | 8. 46 529 | 9. 99 982 | 40 | 20 | 8. 50 636 | 8. 50 658 | 9. 99 978 | 40 |
| 30 | 8. 46 583 | 8. 46 602 | 9. 99 981 | 30 | 30 | 8. 50 701 | 8. 50 724 | 9. 99 978 | 30 |
| 40 | 8. 46 655 | 8. 46 674 | 9. 99 981 | 20 | 40 | 8. 50 767 | 8. 50 789 | 9. 99 977 | 20 |
| 50 | 8. 46 727 | 8. 46 745 | 9. 99 981 | 10 | 50 | 8. 50 832 | 8. 50 855 | 9. 99 977 | 10 |
| **41** 0 | 8. 46 799 | 8. 46 817 | 9. 99 981 | 0 **19** | **51** 0 | 8. 50 897 | 8. 50 920 | 9. 99 977 | 0 **9** |
| 10 | 8. 46 870 | 8. 46 889 | 9. 99 981 | 50 | 10 | 8. 50 963 | 8. 50 985 | 9. 99 977 | 50 |
| 20 | 8. 46 942 | 8. 46 960 | 9. 99 981 | 40 | 20 | 8. 51 028 | 8. 51 050 | 9. 99 977 | 40 |
| 30 | 8. 47 013 | 8. 47 032 | 9. 99 981 | 30 | 30 | 8. 51 092 | 8. 51 115 | 9. 99 977 | 30 |
| 40 | 8. 47 084 | 8. 47 103 | 9. 99 981 | 20 | 40 | 8. 51 157 | 8. 51 180 | 9. 99 977 | 20 |
| 50 | 8. 47 155 | 8. 47 174 | 9. 99 981 | 10 | 50 | 8. 51 222 | 8. 51 245 | 9. 99 977 | 10 |
| **42** 0 | 8. 47 226 | 8. 47 245 | 9. 99 981 | 0 **18** | **52** 0 | 8. 51 287 | 8. 51 310 | 9. 99 977 | 0 **8** |
| 10 | 8. 47 297 | 8. 47 316 | 9. 99 981 | 50 | 10 | 8. 51 351 | 8. 51 374 | 9. 99 977 | 50 |
| 20 | 8. 47 368 | 8. 47 387 | 9. 99 981 | 40 | 20 | 8. 51 416 | 8. 51 439 | 9. 99 977 | 40 |
| 30 | 8. 47 439 | 8. 47 458 | 9. 99 981 | 30 | 30 | 8. 51 480 | 8. 51 503 | 9. 99 977 | 30 |
| 40 | 8. 47 509 | 8. 47 528 | 9. 99 981 | 20 | 40 | 8. 51 544 | 8. 51 568 | 9. 99 977 | 20 |
| 50 | 8. 47 580 | 8. 47 599 | 9. 99 981 | 10 | 50 | 8. 51 609 | 8. 51 632 | 9. 99 977 | 10 |
| **43** 0 | 8. 47 650 | 8. 47 669 | 9. 99 981 | 0 **17** | **53** 0 | 8. 51 673 | 8. 51 696 | 9. 99 977 | 0 **7** |
| 10 | 8. 47 720 | 8. 47 740 | 9. 99 980 | 50 | 10 | 8. 51 737 | 8. 51 760 | 9. 99 976 | 50 |
| 20 | 8. 47 790 | 8. 47 810 | 9. 99 980 | 40 | 20 | 8. 51 801 | 8. 51 824 | 9. 99 976 | 40 |
| 30 | 8. 47 860 | 8. 47 880 | 9. 99 980 | 30 | 30 | 8. 51 864 | 8. 51 888 | 9. 99 976 | 30 |
| 40 | 8. 47 930 | 8. 47 950 | 9. 99 980 | 20 | 40 | 8. 51 928 | 8. 51 952 | 9. 99 976 | 20 |
| 50 | 8. 48 000 | 8. 48 020 | 9. 99 980 | 10 | 50 | 8. 51 992 | 8. 52 015 | 9. 99 976 | 10 |
| **44** 0 | 8. 48 069 | 8. 48 090 | 9. 99 980 | 0 **16** | **54** 0 | 8. 52 055 | 8. 52 079 | 9. 99 976 | 0 **6** |
| 10 | 8. 48 139 | 8. 48 159 | 9. 99 980 | 50 | 10 | 8. 52 119 | 8. 52 143 | 9. 99 976 | 50 |
| 20 | 8. 48 208 | 8. 48 228 | 9. 99 980 | 40 | 20 | 8. 52 182 | 8. 52 206 | 9. 99 976 | 40 |
| 30 | 8. 48 278 | 8. 48 298 | 9. 99 980 | 30 | 30 | 8. 52 245 | 8. 52 269 | 9. 99 976 | 30 |
| 40 | 8. 48 347 | 8. 48 367 | 9. 99 980 | 20 | 40 | 8. 52 308 | 8. 52 332 | 9. 99 976 | 20 |
| 50 | 8. 48 416 | 8. 48 436 | 9. 99 980 | 10 | 50 | 8. 52 371 | 8. 52 396 | 9. 99 976 | 10 |
| **45** 0 | 8. 48 485 | 8. 48 505 | 9. 99 980 | 0 **15** | **55** 0 | 8. 52 434 | 8. 52 459 | 9. 99 976 | 0 **5** |
| 10 | 8. 48 554 | 8. 48 574 | 9. 99 980 | 50 | 10 | 8. 52 497 | 8. 52 522 | 9. 99 976 | 50 |
| 20 | 8. 48 622 | 8. 48 643 | 9. 99 980 | 40 | 20 | 8. 52 560 | 8. 52 584 | 9. 99 976 | 40 |
| 30 | 8. 48 691 | 8. 48 711 | 9. 99 980 | 30 | 30 | 8. 52 623 | 8. 52 647 | 9. 99 975 | 30 |
| 40 | 8. 48 760 | 8. 48 780 | 9. 99 979 | 20 | 40 | 8. 52 685 | 8. 52 710 | 9. 99 975 | 20 |
| 50 | 8. 48 828 | 8. 48 849 | 9. 99 979 | 10 | 50 | 8. 52 748 | 8. 52 772 | 9. 99 975 | 10 |
| **46** 0 | 8. 48 896 | 8. 48 917 | 9. 99 979 | 0 **14** | **56** 0 | 8. 52 810 | 8. 52 835 | 9. 99 975 | 0 **4** |
| 10 | 8. 48 965 | 8. 48 985 | 9. 99 979 | 50 | 10 | 8. 52 872 | 8. 52 897 | 9. 99 975 | 50 |
| 20 | 8. 49 033 | 8. 49 053 | 9. 99 979 | 40 | 20 | 8. 52 935 | 8. 52 960 | 9. 99 975 | 40 |
| 30 | 8. 49 101 | 8. 49 121 | 9. 99 979 | 30 | 30 | 8. 52 997 | 8. 53 022 | 9. 99 975 | 30 |
| 40 | 8. 49 169 | 8. 49 189 | 9. 99 979 | 20 | 40 | 8. 53 059 | 8. 53 084 | 9. 99 975 | 20 |
| 50 | 8. 49 236 | 8. 49 257 | 9. 99 979 | 10 | 50 | 8. 53 121 | 8. 53 146 | 9. 99 975 | 10 |
| **47** 0 | 8. 49 304 | 8. 49 325 | 9. 99 979 | 0 **13** | **57** 0 | 8. 53 183 | 8. 53 208 | 9. 99 975 | 0 **3** |
| 10 | 8. 49 372 | 8. 49 393 | 9. 99 979 | 50 | 10 | 8. 53 245 | 8. 53 270 | 9. 99 975 | 50 |
| 20 | 8. 49 439 | 8. 49 460 | 9. 99 979 | 40 | 20 | 8. 53 306 | 8. 53 332 | 9. 99 975 | 40 |
| 30 | 8. 49 506 | 8. 49 528 | 9. 99 979 | 30 | 30 | 8. 53 368 | 8. 53 393 | 9. 99 975 | 30 |
| 40 | 8. 49 574 | 8. 49 595 | 9. 99 979 | 20 | 40 | 8. 53 429 | 8. 53 455 | 9. 99 975 | 20 |
| 50 | 8. 49 641 | 8. 49 662 | 9. 99 979 | 10 | 50 | 8. 53 491 | 8. 53 516 | 9. 99 974 | 10 |
| **48** 0 | 8. 49 708 | 8. 49 729 | 9. 99 979 | 0 **12** | **58** 0 | 8. 53 552 | 8. 53 578 | 9. 99 974 | 0 **2** |
| 10 | 8. 49 775 | 8. 49 796 | 9. 99 979 | 50 | 10 | 8. 53 614 | 8. 53 639 | 9. 99 974 | 50 |
| 20 | 8. 49 842 | 8. 49 863 | 9. 99 978 | 40 | 20 | 8. 53 675 | 8. 53 700 | 9. 99 974 | 40 |
| 30 | 8. 49 908 | 8. 49 930 | 9. 99 978 | 30 | 30 | 8. 53 736 | 8. 53 762 | 9. 99 974 | 30 |
| 40 | 8. 49 975 | 8. 49 997 | 9. 99 978 | 20 | 40 | 8. 53 797 | 8. 53 823 | 9. 99 974 | 20 |
| 50 | 8. 50 042 | 8. 50 063 | 9. 99 978 | 10 | 50 | 8. 53 858 | 8. 53 884 | 9. 99 974 | 10 |
| **49** 0 | 8. 50 108 | 8. 50 130 | 9. 99 978 | 0 **11** | **59** 0 | 8. 53 919 | 8. 53 945 | 9. 99 974 | 0 **1** |
| 10 | 8. 50 174 | 8. 50 196 | 9. 99 978 | 50 | 10 | 8. 53 979 | 8. 54 005 | 9. 99 974 | 50 |
| 20 | 8. 50 241 | 8. 50 263 | 9. 99 978 | 40 | 20 | 8. 54 040 | 8. 54 066 | 9. 99 974 | 40 |
| 30 | 8. 50 307 | 8. 50 329 | 9. 99 978 | 30 | 30 | 8. 54 101 | 8. 54 127 | 9. 99 974 | 30 |
| 40 | 8. 50 373 | 8. 50 395 | 9. 99 978 | 20 | 40 | 8. 54 161 | 8. 54 187 | 9. 99 974 | 20 |
| 50 | 8. 50 439 | 8. 50 461 | 9. 99 978 | 10 | 50 | 8. 54 222 | 8. 54 248 | 9. 99 974 | 10 |
| **50** 0 | 8. 50 504 | 8. 50 527 | 9. 99 978 | 0 **10** | **60** 0 | 8. 54 282 | 8. 54 308 | 9. 99 974 | 0 **0** |
| ′ ″ | log cos | log cot | log sin | ″ ′ | ′ ″ | log cos | log cot | log sin | ″ ′ |

| ′ | log sin | log tan | log cot | log cos | ′ |
|---|---|---|---|---|---|
| | —8— | —8— | —11— | —9— | |
| 0 | 24 186 | 24 192 | 75 808 | 99 993 | 60 |
| 1 | 24 903 | 24 910 | 75 090 | 99 993 | 59 |
| 2 | 25 609 | 25 616 | 74 384 | 99 993 | 58 |
| 3 | 26 304 | 26 312 | 73 688 | 99 993 | 57 |
| 4 | 26 988 | 26 996 | 73 004 | 99 992 | 56 |
| 5 | 27 661 | 27 669 | 72 331 | 99 992 | 55 |
| 6 | 28 324 | 28 332 | 71 668 | 99 992 | 54 |
| 7 | 28 977 | 28 986 | 71 014 | 99 992 | 53 |
| 8 | 29 621 | 29 629 | 70 371 | 99 992 | 52 |
| 9 | 30 255 | 30 263 | 69 737 | 99 991 | 51 |
| 10 | 30 879 | 30 888 | 69 112 | 99 991 | 50 |
| 11 | 31 495 | 31 505 | 68 495 | 99 991 | 49 |
| 12 | 32 103 | 32 112 | 67 888 | 99 990 | 48 |
| 13 | 32 702 | 32 711 | 67 289 | 99 990 | 47 |
| 14 | 33 292 | 33 302 | 66 698 | 99 990 | 46 |
| 15 | 33 875 | 33 886 | 66 114 | 99 990 | 45 |
| 16 | 34 450 | 34 461 | 65 539 | 99 989 | 44 |
| 17 | 35 018 | 35 029 | 64 971 | 99 989 | 43 |
| 18 | 35 578 | 35 590 | 64 410 | 99 989 | 42 |
| 19 | 36 131 | 36 143 | 63 857 | 99 989 | 41 |
| 20 | 36 678 | 36 689 | 63 311 | 99 988 | 40 |
| 21 | 37 217 | 37 229 | 62 771 | 99 988 | 39 |
| 22 | 37 750 | 37 762 | 62 238 | 99 988 | 38 |
| 23 | 38 276 | 38 289 | 61 711 | 99 987 | 37 |
| 24 | 38 796 | 38 809 | 61 191 | 99 987 | 36 |
| 25 | 39 310 | 39 323 | 60 677 | 99 987 | 35 |
| 26 | 39 818 | 39 832 | 60 168 | 99 986 | 34 |
| 27 | 40 320 | 40 334 | 59 666 | 99 986 | 33 |
| 28 | 40 816 | 40 830 | 59 170 | 99 986 | 32 |
| 29 | 41 307 | 41 321 | 58 679 | 99 985 | 31 |
| 30 | 41 792 | 41 807 | 58 193 | 99 985 | 30 |
| 31 | 42 272 | 42 287 | 57 713 | 99 985 | 29 |
| 32 | 42 746 | 42 762 | 57 238 | 99 984 | 28 |
| 33 | 43 216 | 43 232 | 56 768 | 99 984 | 27 |
| 34 | 43 680 | 43 696 | 56 304 | 99 984 | 26 |
| 35 | 44 139 | 44 156 | 55 844 | 99 983 | 25 |
| 36 | 44 594 | 44 611 | 55 389 | 99 983 | 24 |
| 37 | 45 044 | 45 061 | 54 939 | 99 983 | 23 |
| 38 | 45 489 | 45 507 | 54 493 | 99 982 | 22 |
| 39 | 45 930 | 45 948 | 54 052 | 99 982 | 21 |
| 40 | 46 366 | 46 385 | 53 615 | 99 982 | 20 |
| 41 | 46 799 | 46 817 | 53 183 | 99 981 | 19 |
| 42 | 47 226 | 47 245 | 52 755 | 99 981 | 18 |
| 43 | 47 650 | 47 669 | 52 331 | 99 981 | 17 |
| 44 | 48 069 | 48 089 | 51 911 | 99 980 | 16 |
| 45 | 48 485 | 48 505 | 51 495 | 99 980 | 15 |
| 46 | 48 896 | 48 917 | 51 083 | 99 979 | 14 |
| 47 | 49 304 | 49 325 | 50 675 | 99 979 | 13 |
| 48 | 49 708 | 49 729 | 50 271 | 99 979 | 12 |
| 49 | 50 108 | 50 130 | 49 870 | 99 978 | 11 |
| 50 | 50 504 | 50 527 | 49 473 | 99 978 | 10 |
| 51 | 50 897 | 50 920 | 49 080 | 99 977 | 9 |
| 52 | 51 287 | 51 310 | 48 690 | 99 977 | 8 |
| 53 | 51 673 | 51 696 | 48 304 | 99 977 | 7 |
| 54 | 52 055 | 52 079 | 47 921 | 99 976 | 6 |
| 55 | 52 434 | 52 459 | 47 541 | 99 976 | 5 |
| 56 | 52 810 | 52 835 | 47 165 | 99 975 | 4 |
| 57 | 53 183 | 53 208 | 46 792 | 99 975 | 3 |
| 58 | 53 552 | 53 578 | 46 422 | 99 974 | 2 |
| 59 | 53 919 | 53 945 | 46 055 | 99 974 | 1 |
| 60 | 54 282 | 54 308 | 45 692 | 99 974 | 0 |
| ′ | log cos | log cot | log tan | log sin | ′ |

| ′ | log sin | log tan | log cot | log cos | ′ |
|---|---|---|---|---|---|
| | —8— | —8— | —11— | —9— | |
| 0 | 54 282 | 54 308 | 45 692 | 99 974 | 60 |
| 1 | 54 642 | 54 669 | 45 331 | 99 973 | 59 |
| 2 | 54 999 | 55 027 | 44 973 | 99 973 | 58 |
| 3 | 55 354 | 55 382 | 44 618 | 99 972 | 57 |
| 4 | 55 705 | 55 734 | 44 266 | 99 972 | 56 |
| 5 | 56 054 | 56 083 | 43 917 | 99 971 | 55 |
| 6 | 56 400 | 56 429 | 43 571 | 99 971 | 54 |
| 7 | 56 743 | 56 773 | 43 227 | 99 970 | 53 |
| 8 | 57 084 | 57 114 | 42 886 | 99 970 | 52 |
| 9 | 57 421 | 57 452 | 42 548 | 99 969 | 51 |
| 10 | 57 757 | 57 788 | 42 212 | 99 969 | 50 |
| 11 | 58 089 | 58 121 | 41 879 | 99 968 | 49 |
| 12 | 58 419 | 58 451 | 41 549 | 99 968 | 48 |
| 13 | 58 747 | 58 779 | 41 221 | 99 967 | 47 |
| 14 | 59 072 | 59 105 | 40 895 | 99 967 | 46 |
| 15 | 59 395 | 59 428 | 40 572 | 99 967 | 45 |
| 16 | 59 715 | 59 749 | 40 251 | 99 966 | 44 |
| 17 | 60 033 | 60 068 | 39 932 | 99 966 | 43 |
| 18 | 60 349 | 60 384 | 39 616 | 99 965 | 42 |
| 19 | 60 662 | 60 698 | 39 302 | 99 964 | 41 |
| 20 | 60 973 | 61 009 | 38 991 | 99 964 | 40 |
| 21 | 61 282 | 61 319 | 38 681 | 99 963 | 39 |
| 22 | 61 589 | 61 626 | 38 374 | 99 963 | 38 |
| 23 | 61 894 | 61 931 | 38 069 | 99 962 | 37 |
| 24 | 62 196 | 62 234 | 37 766 | 99 962 | 36 |
| 25 | 62 497 | 62 535 | 37 465 | 99 961 | 35 |
| 26 | 62 795 | 62 834 | 37 166 | 99 961 | 34 |
| 27 | 63 091 | 63 131 | 36 869 | 99 960 | 33 |
| 28 | 63 385 | 63 426 | 36 574 | 99 960 | 32 |
| 29 | 63 678 | 63 718 | 36 282 | 99 959 | 31 |
| 30 | 63 968 | 64 009 | 35 991 | 99 959 | 30 |
| 31 | 64 256 | 64 298 | 35 702 | 99 958 | 29 |
| 32 | 64 543 | 64 585 | 35 415 | 99 958 | 28 |
| 33 | 64 827 | 64 870 | 35 130 | 99 957 | 27 |
| 34 | 65 110 | 65 154 | 34 846 | 99 956 | 26 |
| 35 | 65 391 | 65 435 | 34 565 | 99 956 | 25 |
| 36 | 65 670 | 65 715 | 34 285 | 99 955 | 24 |
| 37 | 65 947 | 65 993 | 34 007 | 99 955 | 23 |
| 38 | 66 223 | 66 269 | 33 731 | 99 954 | 22 |
| 39 | 66 497 | 66 543 | 33 457 | 99 954 | 21 |
| 40 | 66 769 | 66 816 | 33 184 | 99 953 | 20 |
| 41 | 67 039 | 67 087 | 32 913 | 99 952 | 19 |
| 42 | 67 308 | 67 356 | 32 644 | 99 952 | 18 |
| 43 | 67 575 | 67 624 | 32 376 | 99 951 | 17 |
| 44 | 67 841 | 67 890 | 32 110 | 99 951 | 16 |
| 45 | 68 104 | 68 154 | 31 846 | 99 950 | 15 |
| 46 | 68 367 | 68 417 | 31 583 | 99 949 | 14 |
| 47 | 68 627 | 68 678 | 31 322 | 99 949 | 13 |
| 48 | 68 886 | 68 938 | 31 062 | 99 948 | 12 |
| 49 | 69 144 | 69 196 | 30 804 | 99 948 | 11 |
| 50 | 69 400 | 69 453 | 30 547 | 99 947 | 10 |
| 51 | 69 654 | 69 708 | 30 292 | 99 946 | 9 |
| 52 | 69 907 | 69 962 | 30 038 | 99 946 | 8 |
| 53 | 70 159 | 70 214 | 29 786 | 99 945 | 7 |
| 54 | 70 409 | 70 465 | 29 535 | 99 944 | 6 |
| 55 | 70 658 | 70 714 | 29 286 | 99 944 | 5 |
| 56 | 70 905 | 70 962 | 29 038 | 99 943 | 4 |
| 57 | 71 151 | 71 208 | 28 792 | 99 942 | 3 |
| 58 | 71 395 | 71 453 | 28 547 | 99 942 | 2 |
| 59 | 71 638 | 71 697 | 28 303 | 99 941 | 1 |
| 60 | 71 880 | 71 940 | 28 060 | 99 940 | 0 |
| ′ | log cos | log cot | log tan | log sin | ′ |

| ' | log sin | log tan | log cot | log cos | ' |
|---|---------|---------|---------|---------|---|
|   | —8—     | —8—     | —11—    | —9—     |   |
| 0 | 71 880 | 71 940 | 28 060 | 99 940 | 60 |
| 1 | 72 120 | 72 181 | 27 819 | 99 940 | 59 |
| 2 | 72 359 | 72 420 | 27 580 | 99 939 | 58 |
| 3 | 72 597 | 72 659 | 27 341 | 99 938 | 57 |
| 4 | 72 834 | 72 896 | 27 104 | 99 938 | 56 |
| 5 | 73 069 | 73 132 | 26 868 | 99 937 | 55 |
| 6 | 73 303 | 73 366 | 26 634 | 99 936 | 54 |
| 7 | 73 535 | 73 600 | 26 400 | 99 936 | 53 |
| 8 | 73 767 | 73 832 | 26 168 | 99 935 | 52 |
| 9 | 73 997 | 74 063 | 25 937 | 99 934 | 51 |
| 10 | 74 226 | 74 292 | 25 708 | 99 934 | 50 |
| 11 | 74 454 | 74 521 | 25 479 | 99 933 | 49 |
| 12 | 74 680 | 74 748 | 25 252 | 99 932 | 48 |
| 13 | 74 906 | 74 974 | 25 026 | 99 932 | 47 |
| 14 | 75 130 | 75 199 | 24 801 | 99 931 | 46 |
| 15 | 75 353 | 75 423 | 24 577 | 99 930 | 45 |
| 16 | 75 575 | 75 645 | 24 355 | 99 929 | 44 |
| 17 | 75 795 | 75 867 | 24 133 | 99 929 | 43 |
| 18 | 76 015 | 76 087 | 23 913 | 99 928 | 42 |
| 19 | 76 234 | 76 306 | 23 694 | 99 927 | 41 |
| 20 | 76 451 | 76 525 | 23 475 | 99 926 | 40 |
| 21 | 76 667 | 76 742 | 23 258 | 99 926 | 39 |
| 22 | 76 883 | 76 958 | 23 042 | 99 925 | 38 |
| 23 | 77 097 | 77 173 | 22 827 | 99 924 | 37 |
| 24 | 77 310 | 77 387 | 22 613 | 99 923 | 36 |
| 25 | 77 522 | 77 600 | 22 400 | 99 923 | 35 |
| 26 | 77 733 | 77 811 | 22 189 | 99 922 | 34 |
| 27 | 77 943 | 78 022 | 21 978 | 99 921 | 33 |
| 28 | 78 152 | 78 232 | 21 768 | 99 920 | 32 |
| 29 | 78 360 | 78 441 | 21 559 | 99 920 | 31 |
| 30 | 78 568 | 78 649 | 21 351 | 99 919 | 30 |
| 31 | 78 774 | 78 855 | 21 145 | 99 918 | 29 |
| 32 | 78 979 | 79 061 | 20 939 | 99 917 | 28 |
| 33 | 79 183 | 79 266 | 20 734 | 99 917 | 27 |
| 34 | 79 386 | 79 470 | 20 530 | 99 916 | 26 |
| 35 | 79 588 | 79 673 | 20 327 | 99 915 | 25 |
| 36 | 79 789 | 79 875 | 20 125 | 99 914 | 24 |
| 37 | 79 990 | 80 076 | 19 924 | 99 913 | 23 |
| 38 | 80 189 | 80 277 | 19 723 | 99 913 | 22 |
| 39 | 80 388 | 80 476 | 19 524 | 99 912 | 21 |
| 40 | 80 585 | 80 674 | 19 326 | 99 911 | 20 |
| 41 | 80 782 | 80 872 | 19 128 | 99 910 | 19 |
| 42 | 80 978 | 81 068 | 18 932 | 99 909 | 18 |
| 43 | 81 173 | 81 264 | 18 736 | 99 909 | 17 |
| 44 | 81 367 | 81 459 | 18 541 | 99 908 | 16 |
| 45 | 81 560 | 81 653 | 18 347 | 99 907 | 15 |
| 46 | 81 752 | 81 846 | 18 154 | 99 906 | 14 |
| 47 | 81 944 | 82 038 | 17 962 | 99 905 | 13 |
| 48 | 82 134 | 82 230 | 17 770 | 99 904 | 12 |
| 49 | 82 324 | 82 420 | 17 580 | 99 904 | 11 |
| 50 | 82 513 | 82 610 | 17 390 | 99 903 | 10 |
| 51 | 82 701 | 82 799 | 17 201 | 99 902 | 9 |
| 52 | 82 888 | 82 987 | 17 013 | 99 901 | 8 |
| 53 | 83 075 | 83 175 | 16 825 | 99 900 | 7 |
| 54 | 83 261 | 83 361 | 16 639 | 99 899 | 6 |
| 55 | 83 446 | 83 547 | 16 453 | 99 898 | 5 |
| 56 | 83 630 | 83 732 | 16 268 | 99 898 | 4 |
| 57 | 83 813 | 83 916 | 16 084 | 99 897 | 3 |
| 58 | 83 996 | 84 100 | 15 900 | 99 896 | 2 |
| 59 | 84 177 | 84 282 | 15 718 | 99 895 | 1 |
| 60 | 84 358 | 84 464 | 15 536 | 99 894 | 0 |
|   | —8—     | —8—     | —11—    | —9—     |   |
| ' | log cos | log cot | log tan | log sin | ' |

**86°**

| ' | log sin | log tan | log cot | log cos | ' |
|---|---------|---------|---------|---------|---|
|   | —8—     | —8—     | —11—    | —9—     |   |
| 0 | 84 358 | 84 464 | 15 536 | 99 894 | 60 |
| 1 | 84 539 | 84 646 | 15 354 | 99 893 | 59 |
| 2 | 84 718 | 84 826 | 15 174 | 99 892 | 58 |
| 3 | 84 897 | 85 006 | 14 994 | 99 891 | 57 |
| 4 | 85 075 | 85 185 | 14 815 | 99 891 | 56 |
| 5 | 85 252 | 85 363 | 14 637 | 99 890 | 55 |
| 6 | 85 429 | 85 540 | 14 460 | 99 889 | 54 |
| 7 | 85 605 | 85 717 | 14 283 | 99 888 | 53 |
| 8 | 85 780 | 85 893 | 14 107 | 99 887 | 52 |
| 9 | 85 955 | 86 069 | 13 931 | 99 886 | 51 |
| 10 | 86 128 | 86 243 | 13 757 | 99 885 | 50 |
| 11 | 86 301 | 86 417 | 13 583 | 99 884 | 49 |
| 12 | 86 474 | 86 591 | 13 409 | 99 883 | 48 |
| 13 | 86 645 | 86 763 | 13 237 | 99 882 | 47 |
| 14 | 86 816 | 86 935 | 13 065 | 99 881 | 46 |
| 15 | 86 987 | 87 106 | 12 894 | 99 880 | 45 |
| 16 | 87 156 | 87 277 | 12 723 | 99 879 | 44 |
| 17 | 87 325 | 87 447 | 12 553 | 99 879 | 43 |
| 18 | 87 494 | 87 616 | 12 384 | 99 878 | 42 |
| 19 | 87 661 | 87 785 | 12 215 | 99 877 | 41 |
| 20 | 87 829 | 87 953 | 12 047 | 99 876 | 40 |
| 21 | 87 995 | 88 120 | 11 880 | 99 875 | 39 |
| 22 | 88 161 | 88 287 | 11 713 | 99 874 | 38 |
| 23 | 88 326 | 88 453 | 11 547 | 99 873 | 37 |
| 24 | 88 490 | 88 618 | 11 382 | 99 872 | 36 |
| 25 | 88 654 | 88 783 | 11 217 | 99 871 | 35 |
| 26 | 88 817 | 88 948 | 11 052 | 99 870 | 34 |
| 27 | 88 980 | 89 111 | 10 889 | 99 869 | 33 |
| 28 | 89 142 | 89 274 | 10 726 | 99 868 | 32 |
| 29 | 89 304 | 89 437 | 10 563 | 99 867 | 31 |
| 30 | 89 464 | 89 598 | 10 402 | 99 866 | 30 |
| 31 | 89 625 | 89 760 | 10 240 | 99 865 | 29 |
| 32 | 89 784 | 89 920 | 10 080 | 99 864 | 28 |
| 33 | 89 943 | 90 080 | 09 920 | 99 863 | 27 |
| 34 | 90 102 | 90 240 | 09 760 | 99 862 | 26 |
| 35 | 90 260 | 90 399 | 09 601 | 99 861 | 25 |
| 36 | 90 417 | 90 557 | 09 443 | 99 860 | 24 |
| 37 | 90 574 | 90 715 | 09 285 | 99 859 | 23 |
| 38 | 90 730 | 90 872 | 09 128 | 99 858 | 22 |
| 39 | 90 885 | 91 029 | 08 971 | 99 857 | 21 |
| 40 | 91 040 | 91 185 | 08 815 | 99 856 | 20 |
| 41 | 91 195 | 91 340 | 08 660 | 99 855 | 19 |
| 42 | 91 349 | 91 495 | 08 505 | 99 854 | 18 |
| 43 | 91 502 | 91 650 | 08 350 | 99 853 | 17 |
| 44 | 91 655 | 91 803 | 08 197 | 99 852 | 16 |
| 45 | 91 807 | 91 957 | 08 043 | 99 851 | 15 |
| 46 | 91 959 | 92 110 | 07 890 | 99 850 | 14 |
| 47 | 92 110 | 92 262 | 07 738 | 99 848 | 13 |
| 48 | 92 261 | 92 414 | 07 586 | 99 847 | 12 |
| 49 | 92 411 | 92 565 | 07 435 | 99 846 | 11 |
| 50 | 92 561 | 92 716 | 07 284 | 99 845 | 10 |
| 51 | 92 710 | 92 866 | 07 134 | 99 844 | 9 |
| 52 | 92 859 | 93 016 | 06 984 | 99 843 | 8 |
| 53 | 93 007 | 93 165 | 06 835 | 99 842 | 7 |
| 54 | 93 154 | 93 313 | 06 687 | 99 841 | 6 |
| 55 | 93 301 | 93 462 | 06 538 | 99 840 | 5 |
| 56 | 93 448 | 93 609 | 06 391 | 99 839 | 4 |
| 57 | 93 594 | 93 756 | 06 244 | 99 838 | 3 |
| 58 | 93 740 | 93 903 | 06 097 | 99 837 | 2 |
| 59 | 93 885 | 94 049 | 05 951 | 99 836 | 1 |
| 60 | 94 030 | 94 195 | 05 805 | 99 834 | 0 |
|   | —8—     | —8—     | —11—    | —9—     |   |
| ' | log cos | log cot | log tan | log sin | ' |

**85°**

| ′ | log sin | log tan | log cot | log cos | ′ |
|---|---|---|---|---|---|
| | —8— | —8— | —11— | —9— | |
| 0 | 94 030 | 94 195 | 05 805 | 99 834 | 60 |
| 1 | 94 174 | 94 340 | 05 660 | 99 833 | 59 |
| 2 | 94 317 | 94 485 | 05 515 | 99 832 | 58 |
| 3 | 94 461 | 94 630 | 05 370 | 99 831 | 57 |
| 4 | 94 603 | 94 773 | 05 227 | 99 830 | 56 |
| 5 | 94 746 | 94 917 | 05 083 | 99 829 | 55 |
| 6 | 94 887 | 95 060 | 04 940 | 99 828 | 54 |
| 7 | 95 029 | 95 202 | 04 798 | 99 827 | 53 |
| 8 | 95 170 | 95 344 | 04 656 | 99 825 | 52 |
| 9 | 95 310 | 95 486 | 04 514 | 99 824 | 51 |
| 10 | 95 450 | 95 627 | 04 373 | 99 823 | 50 |
| 11 | 95 589 | 95 767 | 04 233 | 99 822 | 49 |
| 12 | 95 728 | 95 908 | 04 092 | 99 821 | 48 |
| 13 | 95 867 | 96 047 | 03 953 | 99 820 | 47 |
| 14 | 96 005 | 96 187 | 03 813 | 99 819 | 46 |
| 15 | 96 143 | 96 325 | 03 675 | 99 817 | 45 |
| 16 | 96 280 | 96 464 | 03 536 | 99 816 | 44 |
| 17 | 96 417 | 96 602 | 03 398 | 99 815 | 43 |
| 18 | 96 553 | 96 739 | 03 261 | 99 814 | 42 |
| 19 | 96 689 | 96 877 | 03 123 | 99 813 | 41 |
| 20 | 96 825 | 97 013 | 02 987 | 99 812 | 40 |
| 21 | 96 960 | 97 150 | 02 850 | 99 810 | 39 |
| 22 | 97 095 | 97 285 | 02 715 | 99 809 | 38 |
| 23 | 97 229 | 97 421 | 02 579 | 99 808 | 37 |
| 24 | 97 363 | 97 556 | 02 444 | 99 807 | 36 |
| 25 | 97 496 | 97 691 | 02 309 | 99 806 | 35 |
| 26 | 97 629 | 97 825 | 02 175 | 99 804 | 34 |
| 27 | 97 762 | 97 959 | 02 041 | 99 803 | 33 |
| 28 | 97 894 | 98 092 | 01 908 | 99 802 | 32 |
| 29 | 98 026 | 98 225 | 01 775 | 99 801 | 31 |
| 30 | 98 157 | 98 358 | 01 642 | 99 800 | 30 |
| 31 | 98 288 | 98 490 | 01 510 | 99 798 | 29 |
| 32 | 98 419 | 98 622 | 01 378 | 99 797 | 28 |
| 33 | 98 549 | 98 753 | 01 247 | 99 796 | 27 |
| 34 | 98 679 | 98 884 | 01 116 | 99 795 | 26 |
| 35 | 98 808 | 99 015 | 00 985 | 99 793 | 25 |
| 36 | 98 937 | 99 145 | 00 855 | 99 792 | 24 |
| 37 | 99 066 | 99 275 | 00 725 | 99 791 | 23 |
| 38 | 99 194 | 99 405 | 00 595 | 99 790 | 22 |
| 39 | 99 322 | 99 534 | 00 466 | 99 788 | 21 |
| 40 | 99 450 | 99 662 | 00 338 | 99 787 | 20 |
| 41 | 99 577 | 99 791 | 00 209 | 99 786 | 19 |
| 42 | 99 704 | 99 919 | 00 081 | 99 785 | 18 |
| 43 | 99 830 | 00 046 | 99 954 | 99 783 | 17 |
| 44 | 99 956 | 00 174 | 99 826 | 99 782 | 16 |
| 45 | 00 082 | 00 301 | 99 699 | 99 781 | 15 |
| 46 | 00 207 | 00 427 | 99 573 | 99 780 | 14 |
| 47 | 00 332 | 00 553 | 99 447 | 99 778 | 13 |
| 48 | 00 456 | 00 679 | 99 321 | 99 777 | 12 |
| 49 | 00 581 | 00 805 | 99 195 | 99 776 | 11 |
| 50 | 00 704 | 00 930 | 99 070 | 99 775 | 10 |
| 51 | 00 828 | 01 055 | 98 945 | 99 773 | 9 |
| 52 | 00 951 | 01 179 | 98 821 | 99 772 | 8 |
| 53 | 01 074 | 01 303 | 98 697 | 99 771 | 7 |
| 54 | 01 196 | 01 427 | 98 573 | 99 769 | 6 |
| 55 | 01 318 | 01 550 | 98 450 | 99 768 | 5 |
| 56 | 01 440 | 01 673 | 98 327 | 99 767 | 4 |
| 57 | 01 561 | 01 796 | 98 204 | 99 765 | 3 |
| 58 | 01 682 | 01 918 | 98 082 | 99 764 | 2 |
| 59 | 01 803 | 02 040 | 97 960 | 99 763 | 1 |
| 60 | 01 923 | 02 162 | 97 838 | 99 761 | 0 |
| | —9— | —9— | —10— | —9— | |
| ′ | log cos | log cot | log tan | log sin | ′ |

| ′ | log sin | log tan | log cot | log cos | ′ |
|---|---|---|---|---|---|
| | —9— | —9— | —10— | —9— | |
| 0 | 01 923 | 02 162 | 97 838 | 99 761 | 60 |
| 1 | 02 043 | 02 283 | 97 717 | 99 760 | 59 |
| 2 | 02 163 | 02 404 | 97 596 | 99 759 | 58 |
| 3 | 02 283 | 02 525 | 97 475 | 99 757 | 57 |
| 4 | 02 402 | 02 645 | 97 355 | 99 756 | 56 |
| 5 | 02 520 | 02 766 | 97 234 | 99 755 | 55 |
| 6 | 02 639 | 02 885 | 97 115 | 99 753 | 54 |
| 7 | 02 757 | 03 005 | 96 995 | 99 752 | 53 |
| 8 | 02 874 | 03 124 | 96 876 | 99 751 | 52 |
| 9 | 02 992 | 03 242 | 96 758 | 99 749 | 51 |
| 10 | 03 109 | 03 361 | 96 639 | 99 748 | 50 |
| 11 | 03 226 | 03 479 | 96 521 | 99 747 | 49 |
| 12 | 03 342 | 03 597 | 96 403 | 99 745 | 48 |
| 13 | 03 458 | 03 714 | 96 286 | 99 744 | 47 |
| 14 | 03 574 | 03 832 | 96 168 | 99 742 | 46 |
| 15 | 03 690 | 03 948 | 96 052 | 99 741 | 45 |
| 16 | 03 805 | 04 065 | 95 935 | 99 740 | 44 |
| 17 | 03 920 | 04 181 | 95 819 | 99 738 | 43 |
| 18 | 04 034 | 04 297 | 95 703 | 99 737 | 42 |
| 19 | 04 149 | 04 413 | 95 587 | 99 736 | 41 |
| 20 | 04 262 | 04 528 | 95 472 | 99 734 | 40 |
| 21 | 04 376 | 04 643 | 95 357 | 99 733 | 39 |
| 22 | 04 490 | 04 758 | 95 242 | 99 731 | 38 |
| 23 | 04 603 | 04 873 | 95 127 | 99 730 | 37 |
| 24 | 04 715 | 04 987 | 95 013 | 99 728 | 36 |
| 25 | 04 828 | 05 101 | 94 899 | 99 727 | 35 |
| 26 | 04 940 | 05 214 | 94 786 | 99 726 | 34 |
| 27 | 05 052 | 05 328 | 94 672 | 99 724 | 33 |
| 28 | 05 164 | 05 441 | 94 559 | 99 723 | 32 |
| 29 | 05 275 | 05 553 | 94 447 | 99 721 | 31 |
| 30 | 05 386 | 05 666 | 94 334 | 99 720 | 30 |
| 31 | 05 497 | 05 778 | 94 222 | 99 718 | 29 |
| 32 | 05 607 | 05 890 | 94 110 | 99 717 | 28 |
| 33 | 05 717 | 06 002 | 93 998 | 99 716 | 27 |
| 34 | 05 827 | 06 113 | 93 887 | 99 714 | 26 |
| 35 | 05 937 | 06 224 | 93 776 | 99 713 | 25 |
| 36 | 06 046 | 06 335 | 93 665 | 99 711 | 24 |
| 37 | 06 155 | 06 445 | 93 555 | 99 710 | 23 |
| 38 | 06 264 | 06 556 | 93 444 | 99 708 | 22 |
| 39 | 06 372 | 06 666 | 93 334 | 99 707 | 21 |
| 40 | 06 481 | 06 775 | 93 225 | 99 705 | 20 |
| 41 | 06 589 | 06 885 | 93 115 | 99 704 | 19 |
| 42 | 06 696 | 06 994 | 93 006 | 99 702 | 18 |
| 43 | 06 804 | 07 103 | 92 897 | 99 701 | 17 |
| 44 | 06 911 | 07 211 | 92 789 | 99 699 | 16 |
| 45 | 07 018 | 07 320 | 92 680 | 99 698 | 15 |
| 46 | 07 124 | 07 428 | 92 572 | 99 696 | 14 |
| 47 | 07 231 | 07 536 | 92 464 | 99 695 | 13 |
| 48 | 07 337 | 07 643 | 92 357 | 99 693 | 12 |
| 49 | 07 442 | 07 751 | 92 249 | 99 692 | 11 |
| 50 | 07 548 | 07 858 | 92 142 | 99 690 | 10 |
| 51 | 07 653 | 07 964 | 92 036 | 99 689 | 9 |
| 52 | 07 758 | 08 071 | 91 929 | 99 687 | 8 |
| 53 | 07 863 | 08 177 | 91 823 | 99 686 | 7 |
| 54 | 07 968 | 08 283 | 91 717 | 99 684 | 6 |
| 55 | 08 072 | 08 389 | 91 611 | 99 683 | 5 |
| 56 | 08 176 | 08 495 | 91 505 | 99 681 | 4 |
| 57 | 08 280 | 08 600 | 91 400 | 99 680 | 3 |
| 58 | 08 383 | 08 705 | 91 295 | 99 678 | 2 |
| 59 | 08 486 | 08 810 | 91 190 | 99 677 | 1 |
| 60 | 08 589 | 08 914 | 91 086 | 99 675 | 0 |
| | —9— | —9— | —10— | —9— | |
| ′ | log cos | log cot | log tan | log sin | ′ |

| ′ | log sin 9 | log tan 9 | log cot -10- | log cos 9 | ′ |
|---|---|---|---|---|---|
| 0 | 08 589 | 08 914 | 91 086 | 99 675 | 60 |
| 1 | 08 692 | 09 019 | 90 981 | 99 674 | 59 |
| 2 | 08 795 | 09 123 | 90 877 | 99 672 | 58 |
| 3 | 08 897 | 09 227 | 90 773 | 99 670 | 57 |
| 4 | 08 999 | 09 330 | 90 670 | 99 669 | 56 |
| 5 | 09 101 | 09 434 | 90 566 | 99 667 | 55 |
| 6 | 09 202 | 09 537 | 90 463 | 99 666 | 54 |
| 7 | 09 304 | 09 640 | 90 360 | ·99 664 | 53 |
| 8 | 09 405 | 09 742 | 90 258 | 99 663 | 52 |
| 9 | 09 506 | 09 845 | 90-155 | 99 661 | 51 |
| 10 | 09 606 | 09 947 | 90 053 | 99 659 | 50 |
| 11 | 09 707 | 10 049 | 89 951 | 99 658 | 49 |
| 12 | 09 807 | 10 150 | 89 850 | 99 656 | 48 |
| 13 | 09 907 | 10 252 | 89 748 | 99 655 | 47 |
| 14 | 10 006 | 10 353 | 89 647 | 99 653 | 46 |
| 15 | 10 106 | 10 454 | 89 546 | 99 651 | 45 |
| 16 | 10 205 | 10 555 | 89 445 | 99 650 | 44 |
| 17 | 10 304 | 10 656 | 89 344 | 99 648 | 43 |
| 18 | 10 402 | 10 756 | 89 244 | 99 647 | 42 |
| 19 | 10 501 | 10 856 | 89 144 | 99 645 | 41 |
| 20 | 10 599 | 10 956 | 89 044 | 99 643 | 40 |
| 21 | 10 697 | 11 056 | 88 944 | 99 642 | 39 |
| 22 | 10 795 | 11 155 | 88 845 | 99 640 | 38 |
| 23 | 10 893 | 11 254 | 88 746 | 99 638 | 37 |
| 24 | 10 990 | 11 353 | 88 647 | 99 637 | 36 |
| 25 | 11 087 | 11 452 | 88 548 | 99 635 | 35 |
| 26 | 11 184 | 11 551 | 88 449 | 99 633 | 34 |
| 27 | 11 281 | 11 649 | 88 351 | 99 632 | 33 |
| 28 | 11 377 | 11 747 | 88 253 | 99 630 | 32 |
| 29 | 11 474 | 11 845 | 88 155 | 99 629 | 31 |
| 30 | 11 570 | 11 943 | 88 057 | 99 627 | 30 |
| 31 | 11 666 | 12 040 | 87 960 | 99 625 | 29 |
| 32 | 11 761 | 12 138 | 87 862 | 99 624 | 28 |
| 33 | 11 857 | 12 235 | 87 765 | 99 622 | 27 |
| 34 | 11 952 | 12 332 | 87 668 | 99 620 | 26 |
| 35 | 12 047 | 12 428 | 87 572 | 99 618 | 25 |
| 36 | 12 142 | 12 525 | 87 475 | 99 617 | 24 |
| 37 | 12 236 | 12 621 | 87 379 | 99 615 | 23 |
| 38 | 12 331 | 12 717 | 87 283 | 99 613 | 22 |
| 39 | 12 425 | 12 813 | 87 187 | 99 612 | 21 |
| 40 | 12 519 | 12 909 | 87 091 | 99 610 | 20 |
| 41 | 12 612 | 13 004 | 86 996 | 99 608 | 19 |
| 42 | 12 706 | 13 099 | 86 901 | 99 607 | 18 |
| 43 | 12 799 | 13 194 | 86 806 | 99 605 | 17 |
| 44 | 12 892 | 13 289 | 86 711 | 99 603 | 16 |
| 45 | 12 985 | 13 384 | 86 616 | 99 601 | 15 |
| 46 | 13 078 | 13 478 | 86 522 | 99 600 | 14 |
| 47 | 13 171 | 13 573 | 86 427 | 99 598 | 13 |
| 48 | 13 263 | 13 667 | 86 333 | 99 596 | 12 |
| 49 | 13 355 | 13 761 | 86 239 | 99 595 | 11 |
| 50 | 13 447 | 13 854 | 86 146 | 99 593 | 10 |
| 51 | 13 539 | 13 948 | 86 052 | 99 591 | 9 |
| 52 | 13 630 | 14 041 | 85 959 | 99 589 | 8 |
| 53 | 13 722 | 14 134 | 85 866 | 99 588 | 7 |
| 54 | 13 813 | 14 227 | 85 773 | 99 586 | 6 |
| 55 | 13 904 | 14 320 | 85 680 | 99 584 | 5 |
| 56 | 13 994 | 14 412 | 85 588 | 99 582 | 4 |
| 57 | 14 085 | 14 504 | 85 496 | 99 581 | 3 |
| 58 | 14 175 | 14 597 | 85 403 | 99 579 | 2 |
| 59 | 14 266 | 14 688 | 85 312 | 99 577 | 1 |
| 60 | 14 356 | 14 780 | 85 220 | 99 575 | 0 |
| ′ | log cos 9 | log cot 9 | log tan -10- | log sin 9 | ′ |

| ′ | log sin 9 | log tan 9 | log cot -10- | log cos 9 | ′ |
|---|---|---|---|---|---|
| 0 | 14 356 | 14 780 | 85 220 | 99 575 | 60 |
| 1 | 14 445 | 14 872 | 85 128 | 99 574 | 59 |
| 2 | 14 535 | 14 963 | 85 037 | 99 572 | 58 |
| 3 | 14 624 | 15 054 | 84 946 | 99 570 | 57 |
| 4 | 14 714 | 15 145 | 84 855 | 99 568 | 56 |
| 5 | 14 803 | 15 236 | 84 764 | 99 566 | 55 |
| 6 | 14 891 | 15 327 | 84 673 | 99 565 | 54 |
| 7 | 14 980 | 15 417 | 84 583 | 99 563 | 53 |
| 8 | 15 069 | 15 508 | 84 492 | 99 561 | 52 |
| 9 | 15 157 | 15 598 | 84 402 | 99 559 | 51 |
| 10 | 15 245 | 15 688 | 84 312 | 99 557 | 50 |
| 11 | 15 333 | 15 777 | 84 223 | 99 556 | 49 |
| 12 | 15 421 | 15 867 | 84 133 | 99 554 | 48 |
| 13 | 15 508 | 15 956 | 84 044 | 99 552 | 47 |
| 14 | 15 596 | 16 046 | 83 954 | 99 550 | 46 |
| 15 | 15 683 | 16 135 | 83 865 | 99 548 | 45 |
| 16 | 15 770 | 16 224 | 83 776 | 99 546 | 44 |
| 17 | 15 857 | 16 312 | 83 688 | 99 545 | 43 |
| 18 | 15 944 | 16 401 | 83 599 | 99 543 | 42 |
| 19 | 16 030 | 16 489 | 83 511 | 99 541 | 41 |
| 20 | 16 116 | 16 577 | 83 423 | 99 539 | 40 |
| 21 | 16 203 | 16 665 | 83 335 | 99 537 | 39 |
| 22 | 16 289 | 16 753 | 83 247 | 99 535 | 38 |
| 23 | 16 374 | 16 841 | 83 159 | 99 533 | 37 |
| 24 | 16 460 | 16 928 | 83 072 | 99 532 | 36 |
| 25 | 16 545 | 17 016 | 82 984 | 99 530 | 35 |
| 26 | 16 631 | 17 103 | 82 897 | 99 528 | 34 |
| 27 | 16 716 | 17 190 | 82 810 | 99 526 | 33 |
| 28 | 16 801 | 17 277 | 82 723 | 99 524 | 32 |
| 29 | 16 886 | 17 363 | 82 637 | 99 522 | 31 |
| 30 | 16 970 | 17 450 | 82 550 | 99 520 | 30 |
| 31 | 17 055 | 17 536 | 82 464 | 99 518 | 29 |
| 32 | 17 139 | 17 622 | 82 378 | 99 517 | 28 |
| 33 | 17 223 | 17 708 | 82 292 | 99 515 | 27 |
| 34 | 17 307 | 17 794 | 82 206 | 99 513 | 26 |
| 35 | 17 391 | 17 880 | 82 120 | 99 511 | 25 |
| 36 | 17 474 | 17 965 | 82 035 | 99 509 | 24 |
| 37 | 17 558 | 18 051 | 81 949 | 99 507 | 23 |
| 38 | 17 641 | 18 136 | 81 864 | 99 505 | 22 |
| 39 | 17 724 | 18 221 | 81 779 | 99 503 | 21 |
| 40 | 17 807 | 18 306 | 81 694 | 99 501 | 20 |
| 41 | 17 890 | 18 391 | 81 609 | 99 499 | 19 |
| 42 | 17 973 | 18 475 | 81 525 | 99 497 | 18 |
| 43 | 18 055 | 18 560 | 81 440 | 99 495 | 17 |
| 44 | 18 137 | 18 644 | 81 356 | 99 494 | 16 |
| 45 | 18 220 | 18 728 | 81 272 | 99 492 | 15 |
| 46 | 18 302 | 18 812 | 81 188 | 99 490 | 14 |
| 47 | 18 383 | 18 896 | 81 104 | 99 488 | 13 |
| 48 | 18 465 | 18 979 | 81 021 | 99 486 | 12 |
| 49 | 18 547 | 19 063 | 80 937 | 99 484 | 11 |
| 50 | 18 628 | 19 146 | 80 854 | 99 482 | 10 |
| 51 | 18 709 | 19 229 | 80 771 | 99 480 | 9 |
| 52 | 18 790 | 19 312 | 80 688 | 99 478 | 8 |
| 53 | 18 871 | 19 395 | 80 605 | 99 476 | 7 |
| 54 | 18 952 | 19 478 | 80 522 | 99 474 | 6 |
| 55 | 19 033 | 19 561 | 80 439 | 99 472 | 5 |
| 56 | 19 113 | 19 643 | 80 357 | 99 470 | 4 |
| 57 | 19 193 | 19 725 | 80 275 | 99 468 | 3 |
| 58 | 19 273 | 19 807 | 80 193 | 99 466 | 2 |
| 59 | 19 353 | 19 889 | 80 111 | 99 464 | 1 |
| 60 | 19 433 | 19 971 | 80 029 | 99 462 | 0 |
| ′ | log cos 9 | log cot 9 | log tan -10- | log sin 9 | ′ |

| ′ | log sin | log tan | log cot | log cos | ′ |
|---|---------|---------|---------|---------|---|
|   | 9 | 9 | 10 | 9 |   |
| 0 | 19 433 | 19 971 | 80 029 | 99 462 | 60 |
| 1 | 19 513 | 20 053 | 79 947 | 99 460 | 59 |
| 2 | 19 592 | 20 134 | 79 866 | 99 458 | 58 |
| 3 | 19 672 | 20 216 | 79 784 | 99 456 | 57 |
| 4 | 19 751 | 20 297 | 79 703 | 99 454 | 56 |
| 5 | 19 830 | 20 378 | 79 622 | 99 452 | 55 |
| 6 | 19 909 | 20 459 | 79 541 | 99 450 | 54 |
| 7 | 19 988 | 20 540 | 79 460 | 99 448 | 53 |
| 8 | 20 067 | 20 621 | 79 379 | 99 446 | 52 |
| 9 | 20 145 | 20 701 | 79 299 | 99 444 | 51 |
| 10 | 20 223 | 20 782 | 79 218 | 99 442 | 50 |
| 11 | 20 302 | 20 862 | 79 138 | 99 440 | 49 |
| 12 | 20 380 | 20 942 | 79 058 | 99 438 | 48 |
| 13 | 20 458 | 21 022 | 78 978 | 99 436 | 47 |
| 14 | 20 535 | 21 102 | 78 898 | 99 434 | 46 |
| 15 | 20 613 | 21 182 | 78 818 | 99 432 | 45 |
| 16 | 20 691 | 21 261 | 78 739 | 99 429 | 44 |
| 17 | 20 768 | 21 341 | 78 659 | 99 427 | 43 |
| 18 | 20 845 | 21 420 | 78 580 | 99 425 | 42 |
| 19 | 20 922 | 21 499 | 78 501 | 99 423 | 41 |
| 20 | 20 999 | 21 578 | 78 422 | 99 421 | 40 |
| 21 | 21 076 | 21 657 | 78 343 | 99 419 | 39 |
| 22 | 21 153 | 21 736 | 78 264 | 99 417 | 38 |
| 23 | 21 229 | 21 814 | 78 186 | 99 415 | 37 |
| 24 | 21 306 | 21 893 | 78 107 | 99 413 | 36 |
| 25 | 21 382 | 21 971 | 78 029 | 99 411 | 35 |
| 26 | 21 458 | 22 049 | 77 951 | 99 409 | 34 |
| 27 | 21 534 | 22 127 | 77 873 | 99 407 | 33 |
| 28 | 21 610 | 22 205 | 77 795 | 99 404 | 32 |
| 29 | 21 685 | 22 283 | 77 717 | 99 402 | 31 |
| 30 | 21 761 | 22 361 | 77 639 | 99 400 | 30 |
| 31 | 21 836 | 22 438 | 77 562 | 99 398 | 29 |
| 32 | 21 912 | 22 516 | 77 484 | 99 396 | 28 |
| 33 | 21 987 | 22 593 | 77 407 | 99 394 | 27 |
| 34 | 22 062 | 22 670 | 77 330 | 99 392 | 26 |
| 35 | 22 137 | 22 747 | 77 253 | 99 390 | 25 |
| 36 | 22 211 | 22 824 | 77 176 | 99 388 | 24 |
| 37 | 22 286 | 22 901 | 77 099 | 99 385 | 23 |
| 38 | 22 361 | 22 977 | 77 023 | 99 383 | 22 |
| 39 | 22 435 | 23 054 | 76 946 | 99 381 | 21 |
| 40 | 22 509 | 23 130 | 76 870 | 99 379 | 20 |
| 41 | 22 583 | 23 206 | 76 794 | 99 377 | 19 |
| 42 | 22 657 | 23 283 | 76 717 | 99 375 | 18 |
| 43 | 22 731 | 23 359 | 76 641 | 99 372 | 17 |
| 44 | 22 805 | 23 435 | 76 565 | 99 370 | 16 |
| 45 | 22 878 | 23 510 | 76 490 | 99 368 | 15 |
| 46 | 22 952 | 23 586 | 76 414 | 99 366 | 14 |
| 47 | 23 025 | 23 661 | 76 339 | 99 364 | 13 |
| 48 | 23 098 | 23 737 | 76 263 | 99 362 | 12 |
| 49 | 23 171 | 23 812 | 76 188 | 99 359 | 11 |
| 50 | 23 244 | 23 887 | 76 113 | 99 357 | 10 |
| 51 | 23 317 | 23 962 | 76 038 | 99 355 | 9 |
| 52 | 23 390 | 24 037 | 75 963 | 99 353 | 8 |
| 53 | 23 462 | 24 112 | 75 888 | 99 351 | 7 |
| 54 | 23 535 | 24 186 | 75 814 | 99 348 | 6 |
| 55 | 23 607 | 24 261 | 75 739 | 99 346 | 5 |
| 56 | 23 679 | 24 335 | 75 665 | 99 344 | 4 |
| 57 | 23 752 | 24 410 | 75 590 | 99 342 | 3 |
| 58 | 23 823 | 24 484 | 75 516 | 99 340 | 2 |
| 59 | 23 895 | 24 558 | 75 442 | 99 337 | 1 |
| 60 | 23 967 | 24 632 | 75 368 | 99 335 | 0 |
|   | 9 | 9 | 10 | 9 |   |
| ′ | log cos | log cot | log tan | log sin | ′ |

| ′ | log sin | log tan | log cot | log cos | ′ |
|---|---------|---------|---------|---------|---|
|   | 9 | 9 | 10 | 9 |   |
| 0 | 23 967 | 24 632 | 75 368 | 99 335 | 60 |
| 1 | 24 039 | 24 706 | 75 294 | 99 333 | 59 |
| 2 | 24 110 | 24 779 | 75 221 | 99 331 | 58 |
| 3 | 24 181 | 24 853 | 75 147 | 99 328 | 57 |
| 4 | 24 253 | 24 926 | 75 074 | 99 326 | 56 |
| 5 | 24 324 | 25 000 | 75 000 | 99 324 | 55 |
| 6 | 24 395 | 25 073 | 74 927 | 99 322 | 54 |
| 7 | 24 466 | 25 146 | 74 854 | 99 319 | 53 |
| 8 | 24 536 | 25 219 | 74 781 | 99 317 | 52 |
| 9 | 24 607 | 25 292 | 74 708 | 99 315 | 51 |
| 10 | 24 677 | 25 365 | 74 635 | 99 313 | 50 |
| 11 | 24 748 | 25 437 | 74 563 | 99 310 | 49 |
| 12 | 24 818 | 25 510 | 74 490 | 99 308 | 48 |
| 13 | 24 888 | 25 582 | 74 418 | 99 306 | 47 |
| 14 | 24 958 | 25 655 | 74 345 | 99 304 | 46 |
| 15 | 25 028 | 25 727 | 74 273 | 99 301 | 45 |
| 16 | 25 098 | 25 799 | 74 201 | 99 299 | 44 |
| 17 | 25 168 | 25 871 | 74 129 | 99 297 | 43 |
| 18 | 25 237 | 25 943 | 74 057 | 99 294 | 42 |
| 19 | 25 307 | 26 015 | 73 985 | 99 292 | 41 |
| 20 | 25 376 | 26 086 | 73 914 | 99 290 | 40 |
| 21 | 25 445 | 26 158 | 73 842 | 99 288 | 39 |
| 22 | 25 514 | 26 229 | 73 771 | 99 285 | 38 |
| 23 | 25 583 | 26 301 | 73 699 | 99 283 | 37 |
| 24 | 25 652 | 26 372 | 73 628 | 99 281 | 36 |
| 25 | 25 721 | 26 443 | 73 557 | 99 278 | 35 |
| 26 | 25 790 | 26 514 | 73 486 | 99 276 | 34 |
| 27 | 25 858 | 26 585 | 73 415 | 99 274 | 33 |
| 28 | 25 927 | 26 655 | 73 345 | 99 271 | 32 |
| 29 | 25 995 | 26 726 | 73 274 | 99 269 | 31 |
| 30 | 26 063 | 26 797 | 73 203 | 99 267 | 30 |
| 31 | 26 131 | 26 867 | 73 133 | 99 264 | 29 |
| 32 | 26 199 | 26 937 | 73 063 | 99 262 | 28 |
| 33 | 26 267 | 27 008 | 72 992 | 99 260 | 27 |
| 34 | 26 335 | 27 078 | 72 922 | 99 257 | 26 |
| 35 | 26 403 | 27 148 | 72 852 | 99 255 | 25 |
| 36 | 26 470 | 27 218 | 72 782 | 99 252 | 24 |
| 37 | 26 538 | 27 288 | 72 712 | 99 250 | 23 |
| 38 | 26 605 | 27 357 | 72 643 | 99 248 | 22 |
| 39 | 26 672 | 27 427 | 72 573 | 99 245 | 21 |
| 40 | 26 739 | 27 496 | 72 504 | 99 243 | 20 |
| 41 | 26 806 | 27 566 | 72 434 | 99 241 | 19 |
| 42 | 26 873 | 27 635 | 72 365 | 99 238 | 18 |
| 43 | 26 940 | 27 704 | 72 296 | 99 236 | 17 |
| 44 | 27 007 | 27 773 | 72 227 | 99 233 | 16 |
| 45 | 27 073 | 27 842 | 72 158 | 99 231 | 15 |
| 46 | 27 140 | 27 911 | 72 089 | 99 229 | 14 |
| 47 | 27 206 | 27 980 | 72 020 | 99 226 | 13 |
| 48 | 27 273 | 28 049 | 71 951 | 99 224 | 12 |
| 49 | 27 339 | 28 117 | 71 883 | 99 221 | 11 |
| 50 | 27 405 | 28 186 | 71 814 | 99 219 | 10 |
| 51 | 27 471 | 28 254 | 71 746 | 99 217 | 9 |
| 52 | 27 537 | 28 323 | 71 677 | 99 214 | 8 |
| 53 | 27 602 | 28 391 | 71 609 | 99 212 | 7 |
| 54 | 27 668 | 28 459 | 71 541 | 99 209 | 6 |
| 55 | 27 734 | 28 527 | 71 473 | 99 207 | 5 |
| 56 | 27 799 | 28 595 | 71 405 | 99 204 | 4 |
| 57 | 27 864 | 28 662 | 71 338 | 99 202 | 3 |
| 58 | 27 930 | 28 730 | 71 270 | 99 200 | 2 |
| 59 | 27 995 | 28 798 | 71 202 | 99 197 | 1 |
| 60 | 28 060 | 28 865 | 71 135 | 99 195 | 0 |
|   | 9 | 9 | 10 | 9 |   |
| ′ | log cos | log cot | log tan | log sin | ′ |

| ′ | log sin | log tan | log cot | log cos | ′ | | ′ | log sin | log tan | log cot | log cos | ′ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | −9− | −9− | −10− | −9− | | | | −9− | −9− | −10− | −9− | |
| 0 | 28 060 | 28 865 | 71 135 | 99 195 | 60 | | 0 | 31 788 | 32 747 | 67 253 | 99 040 | 60 |
| 1 | 28 125 | 28 933 | 71 067 | 99 192 | 59 | | 1 | 31 847 | 32 810 | 67 190 | 99 038 | 59 |
| 2 | 28 190 | 29 000 | 71 000 | 99 190 | 58 | | 2 | 31 907 | 32 872 | 67 128 | 99 035 | 58 |
| 3 | 28 254 | 29 067 | 70 933 | 99 187 | 57 | | 3 | 31 966 | 32 933 | 67 067 | 99 032 | 57 |
| 4 | 28 319 | 29 134 | 70 866 | 99 185 | 56 | | 4 | 32 025 | 32 995 | 67 005 | 99 030 | 56 |
| 5 | 28 384 | 29 201 | 70 799 | 99 182 | 55 | | 5 | 32 084 | 33 057 | 66 943 | 99 027 | 55 |
| 6 | 28 448 | 29 268 | 70 732 | 99 180 | 54 | | 6 | 32 143 | 33 119 | 66 881 | 99 024 | 54 |
| 7 | 28 512 | 29 335 | 70 665 | 99 177 | 53 | | 7 | 32 202 | 33 180 | 66 820 | 99 022 | 53 |
| 8 | 28 577 | 29 402 | 70 598 | 99 175 | 52 | | 8 | 32 261 | 33 242 | 66 758 | 99 019 | 52 |
| 9 | 28 641 | 29 468 | 70 532 | 99 172 | 51 | | 9 | 32 319 | 33 303 | 66 697 | 99 016 | 51 |
| 10 | 28 705 | 29 535 | 70 465 | 99 170 | 50 | | 10 | 32 378 | 33 365 | 66 635 | 99 013 | 50 |
| 11 | 28 769 | 29 601 | 70 399 | 99 167 | 49 | | 11 | 32 437 | 33 426 | 66 574 | 99 011 | 49 |
| 12 | 28 833 | 29 668 | 70 332 | 99 165 | 48 | | 12 | 32 495 | 33 487 | 66 513 | 99 008 | 48 |
| 13 | 28 896 | 29 734 | 70 266 | 99 162 | 47 | | 13 | 32 553 | 33 548 | 66 452 | 99 005 | 47 |
| 14 | 28 960 | 29 800 | 70 200 | 99 160 | 46 | | 14 | 32 612 | 33 609 | 66 391 | 99 002 | 46 |
| 15 | 29 024 | 29 866 | 70 134 | 99 157 | 45 | | 15 | 32 670 | 33 670 | 66 330 | 99 000 | 45 |
| 16 | 29 087 | 29 932 | 70 068 | 99 155 | 44 | | 16 | 32 728 | 33 731 | 66 269 | 98 997 | 44 |
| 17 | 29 150 | 29 998 | 70 002 | 99 152 | 43 | | 17 | 32 786 | 33 792 | 66 208 | 98 994 | 43 |
| 18 | 29 214 | 30 064 | 69 936 | 99 150 | 42 | | 18 | 32 844 | 33 853 | 66 147 | 98 991 | 42 |
| 19 | 29 277 | 30 130 | 69 870 | 99 147 | 41 | | 19 | 32 902 | 33 913 | 66 087 | 98 989 | 41 |
| 20 | 29 340 | 30 195 | 69 805 | 99 145 | 40 | | 20 | 32 960 | 33 974 | 66 026 | 98 986 | 40 |
| 21 | 29 403 | 30 261 | 69 739 | 99 142 | 39 | | 21 | 33 018 | 34 034 | 65 966 | 98 983 | 39 |
| 22 | 29 466 | 30 326 | 69 674 | 99 140 | 38 | | 22 | 33 075 | 34 095 | 65 905 | 98 980 | 38 |
| 23 | 29 529 | 30 391 | 69 609 | 99 137 | 37 | | 23 | 33 133 | 34 155 | 65 845 | 98 978 | 37 |
| 24 | 29 591 | 30 457 | 69 543 | 99 135 | 36 | | 24 | 33 190 | 34 215 | 65 785 | 98 975 | 36 |
| 25 | 29 654 | 30 522 | 69 478 | 99 132 | 35 | | 25 | 33 248 | 34 276 | 65 724 | 98 972 | 35 |
| 26 | 29 716 | 30 587 | 69 413 | 99 130 | 34 | | 26 | 33 305 | 34 336 | 65 664 | 98 969 | 34 |
| 27 | 29 779 | 30 652 | 69 348 | 99 127 | 33 | | 27 | 33 362 | 34 396 | 65 604 | 98 967 | 33 |
| 28 | 29 841 | 30 717 | 69 283 | 99 124 | 32 | | 28 | 33 420 | 34 456 | 65 544 | 98 964 | 32 |
| 29 | 29 903 | 30 782 | 69 218 | 99 122 | 31 | | 29 | 33 477 | 34 516 | 65 484 | 98 961 | 31 |
| 30 | 29 966 | 30 846 | 69 154 | 99 119 | 30 | | 30 | 33 534 | 34 576 | 65 424 | 98 958 | 30 |
| 31 | 30 028 | 30 911 | 69 089 | 99 117 | 29 | | 31 | 33 591 | 34 635 | 65 365 | 98 955 | 29 |
| 32 | 30 090 | 30 975 | 69 025 | 99 114 | 28 | | 32 | 33 647 | 34 695 | 65 305 | 98 953 | 28 |
| 33 | 30 151 | 31 040 | 68 960 | 99 112 | 27 | | 33 | 33 704 | 34 755 | 65 245 | 98 950 | 27 |
| 34 | 30 213 | 31 104 | 68 896 | 99 109 | 26 | | 34 | 33 761 | 34 814 | 65 186 | 98 947 | 26 |
| 35 | 30 275 | 31 168 | 68 832 | 99 106 | 25 | | 35 | 33 818 | 34 874 | 65 126 | 98 944 | 25 |
| 36 | 30 336 | 31 233 | 68 767 | 99 104 | 24 | | 36 | 33 874 | 34 933 | 65 067 | 98 941 | 24 |
| 37 | 30 398 | 31 297 | 68 703 | 99 101 | 23 | | 37 | 33 931 | 34 992 | 65 008 | 98 938 | 23 |
| 38 | 30 459 | 31 361 | 68 639 | 99 099 | 22 | | 38 | 33 987 | 35 051 | 64 949 | 98 936 | 22 |
| 39 | 30 521 | 31 425 | 68 575 | 99 096 | 21 | | 39 | 34 043 | 35 111 | 64 889 | 98 933 | 21 |
| 40 | 30 582 | 31 489 | 68 511 | 99 093 | 20 | | 40 | 34 100 | 35 170 | 64 830 | 98 930 | 20 |
| 41 | 30 643 | 31 552 | 68 448 | 99 091 | 19 | | 41 | 34 156 | 35 229 | 64 771 | 98 927 | 19 |
| 42 | 30 704 | 31 616 | 68 384 | 99 088 | 18 | | 42 | 34 212 | 35 288 | 64 712 | 98 924 | 18 |
| 43 | 30 765 | 31 679 | 68 321 | 99 086 | 17 | | 43 | 34 268 | 35 347 | 64 653 | 98 921 | 17 |
| 44 | 30 826 | 31 743 | 68 257 | 99 083 | 16 | | 44 | 34 324 | 35 405 | 64 595 | 98 919 | 16 |
| 45 | 30 887 | 31 806 | 68 194 | 99 080 | 15 | | 45 | 34 380 | 35 464 | 64 536 | 98 916 | 15 |
| 46 | 30 947 | 31 870 | 68 130 | 99 078 | 14 | | 46 | 34 436 | 35 523 | 64 477 | 98 913 | 14 |
| 47 | 31 008 | 31 933 | 68 067 | 99 075 | 13 | | 47 | 34 491 | 35 581 | 64 419 | 98 910 | 13 |
| 48 | 31 068 | 31 996 | 68 004 | 99 072 | 12 | | 48 | 34 547 | 35 640 | 64 360 | 98 907 | 12 |
| 49 | 31 129 | 32 059 | 67 941 | 99 070 | 11 | | 49 | 34 602 | 35 698 | 64 302 | 98 904 | 11 |
| 50 | 31 189 | 32 122 | 67 878 | 99 067 | 10 | | 50 | 34 658 | 35 757 | 64 243 | 98 901 | 10 |
| 51 | 31 250 | 32 185 | 67 815 | 99 064 | 9 | | 51 | 34 713 | 35 815 | 64 185 | 98 898 | 9 |
| 52 | 31 310 | 32 248 | 67 752 | 99 062 | 8 | | 52 | 34 769 | 35 873 | 64 127 | 98 896 | 8 |
| 53 | 31 370 | 32 311 | 67 689 | 99 059 | 7 | | 53 | 34 824 | 35 931 | 64 069 | 98 893 | 7 |
| 54 | 31 430 | 32 373 | 67 627 | 99 056 | 6 | | 54 | 34 879 | 35 989 | 64 011 | 98 890 | 6 |
| 55 | 31 490 | 32 436 | 67 564 | 99 054 | 5 | | 55 | 34 934 | 36 047 | 63 953 | 98 887 | 5 |
| 56 | 31 549 | 32 498 | 67 502 | 99 051 | 4 | | 56 | 34 989 | 36 105 | 63 895 | 98 884 | 4 |
| 57 | 31 609 | 32 561 | 67 439 | 99 048 | 3 | | 57 | 35 044 | 36 163 | 63 837 | 98 881 | 3 |
| 58 | 31 669 | 32 623 | 67 377 | 99 046 | 2 | | 58 | 35 099 | 36 221 | 63 779 | 98 878 | 2 |
| 59 | 31 728 | 32 685 | 67 315 | 99 043 | 1 | | 59 | 35 154 | 36 279 | 63 721 | 98 875 | 1 |
| 60 | 31 788 | 32 747 | 67 253 | 99 040 | 0 | | 60 | 35 209 | 36 336 | 63 664 | 98 872 | 0 |
| | −9− | −9− | −10− | −9− | | | | −9− | −9− | −10− | −9− | |
| ′ | log cos | log cot | log tan | log sin | ′ | | ′ | log cos | log cot | log tan | log sin | ′ |

# 13°

| ' | log sin 9 | log tan 9 | log cot 10 | log cos 9 | ' |
|---|---|---|---|---|---|
| 0 | 35 209 | 36 336 | 63 664 | 98 872 | 60 |
| 1 | 35 263 | 36 394 | 63 606 | 98 869 | 59 |
| 2 | 35 318 | 36 452 | 63 548 | 98 867 | 58 |
| 3 | 35 373 | 36 509 | 63 491 | 98 864 | 57 |
| 4 | 35 427 | 36 566 | 63 434 | 98 861 | 56 |
| 5 | 35 481 | 36 624 | 63 376 | 98 858 | 55 |
| 6 | 35 536 | 36 681 | 63 319 | 98 855 | 54 |
| 7 | 35 590 | 36 738 | 63 262 | 98 852 | 53 |
| 8 | 35 644 | 36 795 | 63 205 | 98 849 | 52 |
| 9 | 35 698 | 36 852 | 63 148 | 98 846 | 51 |
| 10 | 35 752 | 36 909 | 63 091 | 98 843 | 50 |
| 11 | 35 806 | 36 966 | 63 034 | 98 840 | 49 |
| 12 | 35 860 | 37 023 | 62 977 | 98 837 | 48 |
| 13 | 35 914 | 37 080 | 62 920 | 98 834 | 47 |
| 14 | 35 968 | 37 137 | 62 863 | 98 831 | 46 |
| 15 | 36 022 | 37 193 | 62 807 | 98 828 | 45 |
| 16 | 36 075 | 37 250 | 62 750 | 98 825 | 44 |
| 17 | 36 129 | 37 306 | 62 694 | 98 822 | 43 |
| 18 | 36 182 | 37 363 | 62 637 | 98 819 | 42 |
| 19 | 36 236 | 37 419 | 62 581 | 98 816 | 41 |
| 20 | 36 289 | 37 476 | 62 524 | 98 813 | 40 |
| 21 | 36 342 | 37 532 | 62 468 | 98 810 | 39 |
| 22 | 36 395 | 37 588 | 62 412 | 98 807 | 38 |
| 23 | 36 449 | 37 644 | 62 356 | 98 804 | 37 |
| 24 | 36 502 | 37 700 | 62 300 | 98 801 | 36 |
| 25 | 36 555 | 37 756 | 62 244 | 98 798 | 35 |
| 26 | 36 608 | 37 812 | 62 188 | 98 795 | 34 |
| 27 | 36 660 | 37 868 | 62 132 | 98 792 | 33 |
| 28 | 36 713 | 37 924 | 62 076 | 98 789 | 32 |
| 29 | 36 766 | 37 980 | 62 020 | 98 786 | 31 |
| 30 | 36 819 | 38 035 | 61 965 | 98 783 | 30 |
| 31 | 36 871 | 38 091 | 61 909 | 98 780 | 29 |
| 32 | 36 924 | 38 147 | 61 853 | 98 777 | 28 |
| 33 | 36 976 | 38 202 | 61 798 | 98 774 | 27 |
| 34 | 37 028 | 38 257 | 61 743 | 98 771 | 26 |
| 35 | 37 081 | 38 313 | 61 687 | 98 768 | 25 |
| 36 | 37 133 | 38 368 | 61 632 | 98 765 | 24 |
| 37 | 37 185 | 38 423 | 61 577 | 98 762 | 23 |
| 38 | 37 237 | 38 479 | 61 521 | 98 759 | 22 |
| 39 | 37 289 | 38 534 | 61 466 | 98 756 | 21 |
| 40 | 37 341 | 38 589 | 61 411 | 98 753 | 20 |
| 41 | 37 393 | 38 644 | 61 356 | 98 750 | 19 |
| 42 | 37 445 | 38 699 | 61 301 | 98 746 | 18 |
| 43 | 37 497 | 38 754 | 61 246 | 98 743 | 17 |
| 44 | 37 549 | 38 808 | 61 192 | 98 740 | 16 |
| 45 | 37 600 | 38 863 | 61 137 | 98 737 | 15 |
| 46 | 37 652 | 38 918 | 61 082 | 98 734 | 14 |
| 47 | 37 703 | 38 972 | 61 028 | 98 731 | 13 |
| 48 | 37 755 | 39 027 | 60 973 | 98 728 | 12 |
| 49 | 37 806 | 39 082 | 60 918 | 98 725 | 11 |
| 50 | 37 858 | 39 136 | 60 864 | 98 722 | 10 |
| 51 | 37 909 | 39 190 | 60 810 | 98 719 | 9 |
| 52 | 37 960 | 39 245 | 60 755 | 98 715 | 8 |
| 53 | 38 011 | 39 299 | 60 701 | 98 712 | 7 |
| 54 | 38 062 | 39 353 | 60 647 | 98 709 | 6 |
| 55 | 38 113 | 39 407 | 60 593 | 98 706 | 5 |
| 56 | 38 164 | 39 461 | 60 539 | 98 703 | 4 |
| 57 | 38 215 | 39 515 | 60 485 | 98 700 | 3 |
| 58 | 38 266 | 39 569 | 60 431 | 98 697 | 2 |
| 59 | 38 317 | 39 623 | 60 377 | 98 694 | 1 |
| 60 | 38 368 | 39 677 | 60 323 | 98 690 | 0 |
| ' | log cos 9 | log cot 9 | log tan 10 | log sin 9 | ' |

## 76°

# 14°

| ' | log sin 9 | log tan 9 | log cot 10 | log cos 9 | ' |
|---|---|---|---|---|---|
| 0 | 38 368 | 39 677 | 60 323 | 98 690 | 60 |
| 1 | 38 418 | 39 731 | 60 269 | 98 687 | 59 |
| 2 | 38 469 | 39 785 | 60 215 | 98 684 | 58 |
| 3 | 38 519 | 39 838 | 60 162 | 98 681 | 57 |
| 4 | 38 570 | 39 892 | 60 108 | 98 678 | 56 |
| 5 | 38 620 | 39 945 | 60 055 | 98 675 | 55 |
| 6 | 38 670 | 39 999 | 60 001 | 98 671 | 54 |
| 7 | 38 721 | 40 052 | 59 948 | 98 668 | 53 |
| 8 | 38 771 | 40 106 | 59 894 | 98 665 | 52 |
| 9 | 38 821 | 40 159 | 59 841 | 98 662 | 51 |
| 10 | 38 871 | 40 212 | 59 788 | 98 659 | 50 |
| 11 | 38 921 | 40 266 | 59 734 | 98 656 | 49 |
| 12 | 38 971 | 40 319 | 59 681 | 98 652 | 48 |
| 13 | 39 021 | 40 372 | 59 628 | 98 649 | 47 |
| 14 | 39 071 | 40 425 | 59 575 | 98 646 | 46 |
| 15 | 39 121 | 40 478 | 59 522 | 98 643 | 45 |
| 16 | 39 170 | 40 531 | 59 469 | 98 640 | 44 |
| 17 | 39 220 | 40 584 | 59 416 | 98 636 | 43 |
| 18 | 39 270 | 40 636 | 59 364 | 98 633 | 42 |
| 19 | 39 319 | 40 689 | 59 311 | 98 630 | 41 |
| 20 | 39 369 | 40 742 | 59 258 | 98 627 | 40 |
| 21 | 39 418 | 40 795 | 59 205 | 98 623 | 39 |
| 22 | 39 467 | 40 847 | 59 153 | 98 620 | 38 |
| 23 | 39 517 | 40 900 | 59 100 | 98 617 | 37 |
| 24 | 39 566 | 40 952 | 59 048 | 98 614 | 36 |
| 25 | 39 615 | 41 005 | 58 995 | 98 610 | 35 |
| 26 | 39 664 | 41 057 | 58 943 | 98 607 | 34 |
| 27 | 39 713 | 41 109 | 58 891 | 98 604 | 33 |
| 28 | 39 762 | 41 161 | 58 839 | 98 601 | 32 |
| 29 | 39 811 | 41 214 | 58 786 | 98 597 | 31 |
| 30 | 39 860 | 41 266 | 58 734 | 98 594 | 30 |
| 31 | 39 909 | 41 318 | 58 682 | 98 591 | 29 |
| 32 | 39 958 | 41 370 | 58 630 | 98 588 | 28 |
| 33 | 40 006 | 41 422 | 58 578 | 98 584 | 27 |
| 34 | 40 055 | 41 474 | 58 526 | 98 581 | 26 |
| 35 | 40 103 | 41 526 | 58 474 | 98 578 | 25 |
| 36 | 40 152 | 41 578 | 58 422 | 98 574 | 24 |
| 37 | 40 200 | 41 629 | 58 371 | 98 571 | 23 |
| 38 | 40 249 | 41 681 | 58 319 | 98 568 | 22 |
| 39 | 40 297 | 41 733 | 58 267 | 98 565 | 21 |
| 40 | 40 346 | 41 784 | 58 216 | 98 561 | 20 |
| 41 | 40 394 | 41 836 | 58 164 | 98 558 | 19 |
| 42 | 40 442 | 41 887 | 58 113 | 98 555 | 18 |
| 43 | 40 490 | 41 939 | 58 061 | 98 551 | 17 |
| 44 | 40 538 | 41 990 | 58 010 | 98 548 | 16 |
| 45 | 40 586 | 42 041 | 57 959 | 98 545 | 15 |
| 46 | 40 634 | 42 093 | 57 907 | 98 541 | 14 |
| 47 | 40 682 | 42 144 | 57 856 | 98 538 | 13 |
| 48 | 40 730 | 42 195 | 57 805 | 98 535 | 12 |
| 49 | 40 778 | 42 246 | 57 754 | 98 531 | 11 |
| 50 | 40 825 | 42 297 | 57 703 | 98 528 | 10 |
| 51 | 40 873 | 42 348 | 57 652 | 98 525 | 9 |
| 52 | 40 921 | 42 399 | 57 601 | 98 521 | 8 |
| 53 | 40 968 | 42 450 | 57 550 | 98 518 | 7 |
| 54 | 41 016 | 42 501 | 57 499 | 98 515 | 6 |
| 55 | 41 063 | 42 552 | 57 448 | 98 511 | 5 |
| 56 | 41 111 | 42 603 | 57 397 | 98 508 | 4 |
| 57 | 41 158 | 42 653 | 57 347 | 98 505 | 3 |
| 58 | 41 205 | 42 704 | 57 296 | 98 501 | 2 |
| 59 | 41 252 | 42 755 | 57 245 | 98 498 | 1 |
| 60 | 41 300 | 42 805 | 57 195 | 98 494 | 0 |
| ' | log cos 9 | log cot 9 | log tan 10 | log sin 9 | ' |

## 75°

| ′ | log sin 9 | log tan 9 | log cot 10 | log cos 9 | ′ |
|---|---|---|---|---|---|
| 0 | 41 300 | 42 805 | 57 195 | 98 494 | 60 |
| 1 | 41 347 | 42 856 | 57 144 | 98 491 | 59 |
| 2 | 41 394 | 42 906 | 57 094 | 98 488 | 58 |
| 3 | 41 441 | 42 957 | 57 043 | 98 484 | 57 |
| 4 | 41 488 | 43 007 | 56 993 | 98 481 | 56 |
| 5 | 41 535 | 43 057 | 56 943 | 98 477 | 55 |
| 6 | 41 582 | 43 108 | 56 892 | 98 474 | 54 |
| 7 | 41 628 | 43 158 | 56 842 | 98 471 | 53 |
| 8 | 41 675 | 43 208 | 56 792 | 98 467 | 52 |
| 9 | 41 722 | 43 258 | 56 742 | 98 464 | 51 |
| 10 | 41 768 | 43 308 | 56 692 | 98 460 | 50 |
| 11 | 41 815 | 43 358 | 56 642 | 98 457 | 49 |
| 12 | 41 861 | 43 408 | 56 592 | 98 453 | 48 |
| 13 | 41 908 | 43 458 | 56 542 | 98 450 | 47 |
| 14 | 41 954 | 43 508 | 56 492 | 98 447 | 46 |
| 15 | 42 001 | 43 558 | 56 442 | 98 443 | 45 |
| 16 | 42 047 | 43 607 | 56 393 | 98 440 | 44 |
| 17 | 42 093 | 43 657 | 56 343 | 98 436 | 43 |
| 18 | 42 140 | 43 707 | 56 293 | 98 433 | 42 |
| 19 | 42 186 | 43 756 | 56 244 | 98 429 | 41 |
| 20 | 42 232 | 43 806 | 56 194 | 98 426 | 40 |
| 21 | 42 278 | 43 855 | 56 145 | 98 422 | 39 |
| 22 | 42 324 | 43 905 | 56 095 | 98 419 | 38 |
| 23 | 42 370 | 43 954 | 56 046 | 98 415 | 37 |
| 24 | 42 416 | 44 004 | 55 996 | 98 412 | 36 |
| 25 | 42 461 | 44 053 | 55 947 | 98 409 | 35 |
| 26 | 42 507 | 44 102 | 55 898 | 98 405 | 34 |
| 27 | 42 553 | 44 151 | 55 849 | 98 402 | 33 |
| 28 | 42 599 | 44 201 | 55 799 | 98 398 | 32 |
| 29 | 42 644 | 44 250 | 55 750 | 98 395 | 31 |
| 30 | 42 690 | 44 299 | 55 701 | 98 391 | 30 |
| 31 | 42 735 | 44 348 | 55 652 | 98 388 | 29 |
| 32 | 42 781 | 44 397 | 55 603 | 98 384 | 28 |
| 33 | 42 826 | 44 446 | 55 554 | 98 381 | 27 |
| 34 | 42 872 | 44 495 | 55 505 | 98 377 | 26 |
| 35 | 42 917 | 44 544 | 55 456 | 98 373 | 25 |
| 36 | 42 962 | 44 592 | 55 408 | 98 370 | 24 |
| 37 | 43 008 | 44 641 | 55 359 | 98 366 | 23 |
| 38 | 43 053 | 44 690 | 55 310 | 98 363 | 22 |
| 39 | 43 098 | 44 738 | 55 262 | 98 359 | 21 |
| 40 | 43 143 | 44 787 | 55 213 | 98 356 | 20 |
| 41 | 43 188 | 44 836 | 55 164 | 98 352 | 19 |
| 42 | 43 233 | 44 884 | 55 116 | 98 349 | 18 |
| 43 | 43 278 | 44 933 | 55 067 | 98 345 | 17 |
| 44 | 43 323 | 44 981 | 55 019 | 98 342 | 16 |
| 45 | 43 367 | 45 029 | 54 971 | 98 338 | 15 |
| 46 | 43 412 | 45 078 | 54 922 | 98 334 | 14 |
| 47 | 43 457 | 45 126 | 54 874 | 98 331 | 13 |
| 48 | 43 502 | 45 174 | 54 826 | 98 327 | 12 |
| 49 | 43 546 | 45 222 | 54 778 | 98 324 | 11 |
| 50 | 43 591 | 45 271 | 54 729 | 98 320 | 10 |
| 51 | 43 635 | 45 319 | 54 681 | 98 317 | 9 |
| 52 | 43 680 | 45 367 | 54 633 | 98 313 | 8 |
| 53 | 43 724 | 45 415 | 54 585 | 98 309 | 7 |
| 54 | 43 769 | 45 463 | 54 537 | 98 306 | 6 |
| 55 | 43 813 | 45 511 | 54 489 | 98 302 | 5 |
| 56 | 43 857 | 45 559 | 54 441 | 98 299 | 4 |
| 57 | 43 901 | 45 606 | 54 394 | 98 295 | 3 |
| 58 | 43 946 | 45 654 | 54 346 | 98 291 | 2 |
| 59 | 43 990 | 45 702 | 54 298 | 98 288 | 1 |
| 60 | 44 034 | 45 750 | 54 250 | 98 284 | 0 |
| ′ | log cos 9 | log cot 9 | log tan 10 | log sin 9 | ′ |

## 74°

| ′ | log sin 9 | log tan 9 | log cot 10 | log cos 9 | ′ |
|---|---|---|---|---|---|
| 0 | 44 034 | 45 750 | 54 250 | 98 284 | 60 |
| 1 | 44 078 | 45 797 | 54 203 | 98 281 | 59 |
| 2 | 44 122 | 45 845 | 54 155 | 98 277 | 58 |
| 3 | 44 166 | 45 892 | 54 108 | 98 273 | 57 |
| 4 | 44 210 | 45 940 | 54 060 | 98 270 | 56 |
| 5 | 44 253 | 45 987 | 54 013 | 98 266 | 55 |
| 6 | 44 297 | 46 035 | 53 965 | 98 262 | 54 |
| 7 | 44 341 | 46 082 | 53 918 | 98 259 | 53 |
| 8 | 44 385 | 46 130 | 53 870 | 98 255 | 52 |
| 9 | 44 428 | 46 177 | 53 823 | 98 251 | 51 |
| 10 | 44 472 | 46 224 | 53 776 | 98 248 | 50 |
| 11 | 44 516 | 46 271 | 53 729 | 98 244 | 49 |
| 12 | 44 559 | 46 319 | 53 681 | 98 240 | 48 |
| 13 | 44 602 | 46 366 | 53 634 | 98 237 | 47 |
| 14 | 44 646 | 46 413 | 53 587 | 98 233 | 46 |
| 15 | 44 689 | 46 460 | 53 540 | 98 229 | 45 |
| 16 | 44 733 | 46 507 | 53 493 | 98 226 | 44 |
| 17 | 44 776 | 46 554 | 53 446 | 98 222 | 43 |
| 18 | 44 819 | 46 601 | 53 399 | 98 218 | 42 |
| 19 | 44 862 | 46 648 | 53 352 | 98 215 | 41 |
| 20 | 44 905 | 46 694 | 53 306 | 98 211 | 40 |
| 21 | 44 948 | 46 741 | 53 259 | 98 207 | 39 |
| 22 | 44 992 | 46 788 | 53 212 | 98 204 | 38 |
| 23 | 45 035 | 46 835 | 53 165 | 98 200 | 37 |
| 24 | 45 077 | 46 881 | 53 119 | 98 196 | 36 |
| 25 | 45 120 | 46 928 | 53 072 | 98 192 | 35 |
| 26 | 45 163 | 46 975 | 53 025 | 98 189 | 34 |
| 27 | 45 206 | 47 021 | 52 979 | 98 185 | 33 |
| 28 | 45 249 | 47 068 | 52 932 | 98 181 | 32 |
| 29 | 45 292 | 47 114 | 52 886 | 98 177 | 31 |
| 30 | 45 334 | 47 160 | 52 840 | 98 174 | 30 |
| 31 | 45 377 | 47 207 | 52 793 | 98 170 | 29 |
| 32 | 45 419 | 47 253 | 52 747 | 98 166 | 28 |
| 33 | 45 462 | 47 299 | 52 701 | 98 162 | 27 |
| 34 | 45 504 | 47 346 | 52 654 | 98 159 | 26 |
| 35 | 45 547 | 47 392 | 52 608 | 98 155 | 25 |
| 36 | 45 589 | 47 438 | 52 562 | 98 151 | 24 |
| 37 | 45 632 | 47 484 | 52 516 | 98 147 | 23 |
| 38 | 45 674 | 47 530 | 52 470 | 98 144 | 22 |
| 39 | 45 716 | 47 576 | 52 424 | 98 140 | 21 |
| 40 | 45 758 | 47 622 | 52 378 | 98 136 | 20 |
| 41 | 45 801 | 47 668 | 52 332 | 98 132 | 19 |
| 42 | 45 843 | 47 714 | 52 286 | 98 129 | 18 |
| 43 | 45 885 | 47 760 | 52 240 | 98 125 | 17 |
| 44 | 45 927 | 47 806 | 52 194 | 98 121 | 16 |
| 45 | 45 969 | 47 852 | 52 148 | 98 117 | 15 |
| 46 | 46 011 | 47 897 | 52 103 | 98 113 | 14 |
| 47 | 46 053 | 47 943 | 52 057 | 98 110 | 13 |
| 48 | 46 095 | 47 989 | 52 011 | 98 106 | 12 |
| 49 | 46 136 | 48 035 | 51 965 | 98 102 | 11 |
| 50 | 46 178 | 48 080 | 51 920 | 98 098 | 10 |
| 51 | 46 220 | 48 126 | 51 874 | 98 094 | 9 |
| 52 | 46 262 | 48 171 | 51 829 | 98 090 | 8 |
| 53 | 46 303 | 48 217 | 51 783 | 98 087 | 7 |
| 54 | 46 345 | 48 262 | 51 738 | 98 083 | 6 |
| 55 | 46 386 | 48 307 | 51 693 | 98 079 | 5 |
| 56 | 46 428 | 48 353 | 51 647 | 98 075 | 4 |
| 57 | 46 469 | 48 398 | 51 602 | 98 071 | 3 |
| 58 | 46 511 | 48 443 | 51 557 | 98 067 | 2 |
| 59 | 46 552 | 48 489 | 51 511 | 98 063 | 1 |
| 60 | 46 594 | 48 534 | 51 466 | 98 060 | 0 |
| ′ | log cos 9 | log cot 9 | log tan 10 | log sin 9 | ′ |

## 73°

| ′ | log sin −9 | log tan −9 | log cot −10 | log cos −9 | ′ | | ′ | log sin −9 | log tan −9 | log cot −10 | log cos −9 | ′ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 46 594 | 48 534 | 51 466 | 98 060 | 60 | | 0 | 48 998 | 51 17S | 48 822 | 97 821 | 60 |
| 1 | 46 635 | 48 579 | 51 421 | 98 056 | 59 | | 1 | 49 037 | 51 221 | 48 779 | 97 817 | 59 |
| 2 | 46 676 | 48 624 | 51 376 | 98 052 | 58 | | 2 | 49 076 | 51 264 | 48 736 | 97 812 | 58 |
| 3 | 46 717 | 48 669 | 51 331 | 98 048 | 57 | | 3 | 49 115 | 51 306 | 48 694 | 97 808 | 57 |
| 4 | 46 758 | 48 714 | 51 286 | 98 044 | 56 | | 4 | 49 153 | 51 349 | 48 651 | 97 804 | 56 |
| 5 | 46 800 | 48 759 | 51 241 | 98 040 | 55 | | 5 | 49 192 | 51 392 | 48 608 | 97 800 | 55 |
| 6 | 46 841 | 48 804 | 51 196 | 98 036 | 54 | | 6 | 49 231 | 51 435 | 48 565 | 97 796 | 54 |
| 7 | 46 882 | 48 849 | 51 151 | 98 032 | 53 | | 7 | 49 269 | 51 478 | 48 522 | 97 792 | 53 |
| 8 | 46 923 | 48 894 | 51 106 | 98 029 | 52 | | 8 | 49 308 | 51 520 | 48 480 | 97 788 | 52 |
| 9 | 46 964 | 48 939 | 51 061 | 98 025 | 51 | | 9 | 49 347 | 51 563 | 48 437 | 97 784 | 51 |
| 10 | 47 005 | 48 984 | 51 016 | 98 021 | 50 | | 10 | 49 385 | 51 606 | 48 394 | 97 779 | 50 |
| 11 | 47 045 | 49 029 | 50 971 | 98 017 | 49 | | 11 | 49 424 | 51 648 | 48 352 | 97 775 | 49 |
| 12 | 47 086 | 49 073 | 50 927 | 98 013 | 48 | | 12 | 49 462 | 51 691 | 48 309 | 97 771 | 48 |
| 13 | 47 127 | 49 118 | 50 882 | 98 009 | 47 | | 13 | 49 500 | 51 734 | 48 266 | 97 767 | 47 |
| 14 | 47 168 | 49 163 | 50 837 | 98 005 | 46 | | 14 | 49 539 | 51 776 | 48 224 | 97 763 | 46 |
| 15 | 47 209 | 49 207 | 50 793 | 98 001 | 45 | | 15 | 49 577 | 51 819 | 48 181 | 97 759 | 45 |
| 16 | 47 249 | 49 252 | 50 748 | 97 997 | 44 | | 16 | 49 615 | 51 861 | 48 139 | 97 754 | 44 |
| 17 | 47 290 | 49 296 | 50 704 | 97 993 | 43 | | 17 | 49 654 | 51 903 | 48 097 | 97 750 | 43 |
| 18 | 47 330 | 49 341 | 50 659 | 97 989 | 42 | | 18 | 49 692 | 51 946 | 48 054 | 97 746 | 42 |
| 19 | 47 371 | 49 385 | 50 615 | 97 986 | 41 | | 19 | 49 730 | 51 988 | 48 012 | 97 742 | 41 |
| 20 | 47 411 | 49 430 | 50 570 | 97 982 | 40 | | 20 | 49·768 | 52 031 | 47 969 | 97 738 | 40 |
| 21 | 47 452 | 49 474 | 50 526 | 97 978 | 39 | | 21 | 49 806 | 52 073 | 47 927 | 97 734 | 39 |
| 22 | 47 492 | 49 519 | 50 481 | 97 974 | 38 | | 22 | 49 844 | 52 115 | 47 885 | 97 729 | 38 |
| 23 | 47 533 | 49 563 | 50 437 | 97 970 | 37 | | 23 | 49 882 | 52 157 | 47 843 | 97 725 | 37 |
| 24 | 47 573 | 49 607 | 50 393 | 97 966 | 36 | | 24 | 49 920 | 52 200 | 47 800 | 97 721 | 36 |
| 25 | 47 613 | 49 652 | 50 348 | 97 962 | 35 | | 25 | 49 958 | 52 242 | 47 758 | 97 717 | 35 |
| 26 | 47 654 | 49 696 | 50 304 | 97 958 | 34 | | 26 | 49 996 | 52 284 | 47 716 | 97 713 | 34 |
| 27 | 47 694 | 49 740 | 50 260 | 97 954 | 33 | | 27 | 50 034 | 52 326 | 47 674 | 97 708 | 33 |
| 28 | 47 734 | 49 784 | 50 216 | 97 950 | 32 | | 28 | 50 072 | 52 368 | 47 632 | 97 704 | 32 |
| 29 | 47 774 | 49 828 | 50 172 | 97 946 | 31 | | 29 | 50 110 | 52 410 | 47 590 | 97 700 | 31 |
| 30 | 47 814 | 49 872 | 50 128 | 97 942 | 30 | | 30 | 50 148 | 52 452 | 47 548 | 97 696 | 30 |
| 31 | 47 854 | 49 916 | 50 084 | 97 938 | 29 | | 31 | 50 185 | 52 494 | 47 506 | 97 691 | 29 |
| 32 | 47 894 | 49 960 | 50 040 | 97 934 | 28 | | 32 | 50 223 | 52 536 | 47 464 | 97 687 | 28 |
| 33 | 47 934 | 50 004 | 49 996 | 97 930 | 27 | | 33 | 50 261 | 52 578 | 47 422 | 97 683 | 27 |
| 34 | 47 974 | 50 048 | 49 952 | 97 926 | 26 | | 34 | 50 298 | 52 620 | 47 380 | 97 679 | 26 |
| 35 | 48 014 | 50 092 | 49 908 | 97 922 | 25 | | 35 | 50 336 | 52 661 | 47 339 | 97 674 | 25 |
| 36 | 48 054 | 50 136 | 49 864 | 97 918 | 24 | | 36 | 50 374 | 52 703 | 47 297 | 97 670 | 24 |
| 37 | 48 094 | 50 180 | 49 820 | 97 914 | 23 | | 37 | 50 411 | 52 745 | 47 255 | 97 666 | 23 |
| 38 | 48 133 | 50 223 | 49 777 | 97 910 | 22 | | 38 | 50 449 | 52 787 | 47 213 | 97 662 | 22 |
| 39 | 48 173 | 50 267 | 49 733 | 97 906 | 21 | | 39 | 50 486 | 52 829 | 47 171 | 97 657 | 21 |
| 40 | 48 213 | 50 311 | 49 689 | 97 902 | 20 | | 40 | 50 523 | 52 870 | 47 130 | 97 653 | 20 |
| 41 | 48 252 | 50 355 | 49 645 | 97 898 | 19 | | 41 | 50 561 | 52 912 | 47 088 | 97 649 | 19 |
| 42 | 48 292 | 50 398 | 49 602 | 97 894 | 18 | | 42 | 50 598 | 52 953 | 47 047 | 97 645 | 18 |
| 43 | 48 332 | 50 442 | 49 558 | 97 890 | 17 | | 43 | 50 635 | 52 995 | 47 005 | 97 640 | 17 |
| 44 | 48 371 | 50 485 | 49 515 | 97 886 | 16 | | 44 | 50 673 | 53 037 | 46 963 | 97 636 | 16 |
| 45 | 48 411 | 50 529 | 49 471 | 97 882 | 15 | | 45 | 50 710 | 53 078 | 46 922 | 97 632 | 15 |
| 46 | 48 450 | 50 572 | 49 428 | 97 878 | 14 | | 46 | 50 747 | 53 120 | 46 880 | 97 628 | 14 |
| 47 | 48 490 | 50 616 | 49 384 | 97 874 | 13 | | 47 | 50 784 | 53 161 | 46 839 | 97 623 | 13 |
| 48 | 48·529 | 50 659 | 49 341 | 97 870 | 12 | | 48 | 50 821 | 53 202 | 46 798 | 97 619 | 12 |
| 49 | 48 568 | 50 703 | 49 297 | 97 866 | 11 | | 49 | 50 858 | 53 244 | 46 756 | 97 615 | 11 |
| 50 | 48 607 | 50 746 | 49 254 | 97 861 | 10 | | 50 | 50 896 | 53 285 | 46 715 | 97 610 | 10 |
| 51 | 48 647 | 50 789 | 49 211 | 97 857 | 9 | | 51 | 50 933 | 53 327 | 46 673 | 97 606 | 9 |
| 52 | 48 686 | 50 833 | 49 167 | 97 853 | 8 | | 52 | 50 970 | 53 368 | 46 632 | 97 602 | 8 |
| 53 | 48 725 | 50 876 | 49 124 | 97 849 | 7 | | 53 | 51 007 | 53 409 | 46 591 | 97 597 | 7 |
| 54 | 48 764 | 50 919 | 49 081 | 97 845 | 6 | | 54 | 51 043 | 53 450 | 46 550 | 97 593 | 6 |
| 55 | 48 803 | 50 962 | 49 038 | 97 841 | 5 | | 55 | 51 080 | 53 492 | 46 508 | 97 589 | 5 |
| 56 | 48 842 | 51 005 | 48 995 | 97 837 | 4 | | 56 | 51 117 | 53 533 | 46 467 | 97 584 | 4 |
| 57 | 48 881 | 51 048 | 48 952 | 97 833 | 3 | | 57 | 51 154 | 53 574 | 46 426 | 97 580 | 3 |
| 58 | 48 920 | 51 092 | 48 908 | 97 829 | 2 | | 58 | 51 191 | 53 615 | 46 385 | 97 576 | 2 |
| 59 | 48 959 | 51 135 | 48 865 | 97 825 | 1 | | 59 | 51 227 | 53 656 | 46 344 | 97 571 | 1 |
| 60 | 48 998 | 51 178 | 48 822 | 97 821 | 0 | | 60 | 51 264 | 53 697 | 46 303 | 97 567 | 0 |
| ′ | log cos −9 | log cot −9 | log tan −10 | log sin −9 | ′ | | ′ | log cos −9 | log cot −9 | log tan −10 | log sin −9 | ′ |

| ′ | log sin 9— | log tan 9— | log cot 10— | log cos 9— | ′ | | ′ | log sin 9— | log tan 9— | log cot 10— | log cos 9— | ′ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 51 264 | 53 697 | 46 303 | 97 567 | 60 | | 0 | 53 405 | 56 107 | 43 893 | 97 299 | 60 |
| 1 | 51 301 | 53 738 | 46 262 | 97 563 | 59 | | 1 | 53 440 | 56 146 | 43 854 | 97 294 | 59 |
| 2 | 51 338 | 53 779 | 46 221 | 97 558 | 58 | | 2 | 53 475 | 56 185 | 43 815 | 97 289 | 58 |
| 3 | 51 374 | 53 820 | 46 180 | 97 554 | 57 | | 3 | 53 509 | 56 224 | 43 776 | 97 285 | 57 |
| 4 | 51 411 | 53 861 | 46 139 | 97 550 | 56 | | 4 | 53 544 | 56 264 | 43 736 | 97 280 | 56 |
| 5 | 51 447 | 53 902 | 46 098 | 97 545 | 55 | | 5 | 53 578 | 56 303 | 43 697 | 97 276 | 55 |
| 6 | 51 484 | 53 943 | 46 057 | 97 541 | 54 | | 6 | 53 613 | 56 342 | 43 658 | 97 271 | 54 |
| 7 | 51 520 | 53 984 | 46 016 | 97 536 | 53 | | 7 | 53 647 | 56 381 | 43 619 | 97 266 | 53 |
| 8 | 51 557 | 54 025 | 45 975 | 97 532 | 52 | | 8 | 53 682 | 56 420 | 43 580 | 97 262 | 52 |
| 9 | 51 593 | 54 065 | 45 935 | 97 528 | 51 | | 9 | 53 716 | 56 459 | 43 541 | 97 257 | 51 |
| 10 | 51 629 | 54 106 | 45 894 | 97 523 | 50 | | 10 | 53 751 | 56 498 | 43 502 | 97 252 | 50 |
| 11 | 51 666 | 54 147 | 45 853 | 97 519 | 49 | | 11 | 53 785 | 56 537 | 43 463 | 97 248 | 49 |
| 12 | 51 702 | 54 187 | 45 813 | 97 515 | 48 | | 12 | 53 819 | 56 576 | 43 424 | 97 243 | 48 |
| 13 | 51 738 | 54 228 | 45 772 | 97 510 | 47 | | 13 | 53 854 | 56 615 | 43 385 | 97 238 | 47 |
| 14 | 51 774 | 54 269 | 45 731 | 97 506 | 46 | | 14 | 53 888 | 56 654 | 43 346 | 97 234 | 46 |
| 15 | 51 811 | 54 309 | 45 691 | 97 501 | 45 | | 15 | 53 922 | 56 693 | 43 307 | 97 229 | 45 |
| 16 | 51 847 | 54 350 | 45 650 | 97 497 | 44 | | 16 | 53 957 | 56 732 | 43 268 | 97 224 | 44 |
| 17 | 51 883 | 54 390 | 45 610 | 97 492 | 43 | | 17 | 53 991 | 56 771 | 43 229 | 97 220 | 43 |
| 18 | 51 919 | 54 431 | 45 569 | 97 488 | 42 | | 18 | 54 025 | 56 810 | 43 190 | 97 215 | 42 |
| 19 | .51 955 | 54 471 | 45 529 | 97 484 | 41 | | 19 | 54 059 | 56 849 | 43 151 | 97 210 | 41 |
| 20 | 51 991 | 54 512 | 45 488 | 97 479 | 40 | | 20 | 54 093 | 56 887 | 43 113 | 97 206 | 40 |
| 21 | 52 027 | 54 552 | 45 448 | 97 475 | 39 | | 21 | 54 127 | 56 926 | 43 074 | 97 201 | 39 |
| 22 | 52 063 | 54 593 | 45 407 | 97 470 | 38 | | 22 | 54 161 | 56 965 | 43 035 | 97 196 | 38 |
| 23 | 52 099 | 54 633 | 45 367 | 97 466 | 37 | | 23 | 54 195 | 57 004 | 42 996 | 97 192 | 37 |
| 24 | 52 135 | 54 673 | 45 327 | 97 461 | 36 | | 24 | 54 229 | 57 042 | 42 958 | 97 187 | 36 |
| 25 | 52 171 | 54 714 | 45 286 | 97 457 | 35 | | 25 | 54 263 | 57 081 | 42 919 | 97 182 | 35 |
| 26 | 52 207 | 54 754 | 45 246 | 97 453 | 34 | | 26 | 54 297 | 57 120 | 42 880 | 97 178 | 34 |
| 27 | 52 242 | 54 794 | 45 206 | 97 448 | 33 | | 27 | 54 331 | 57 158 | 42 842 | 97 173 | 33 |
| 28 | 52 278 | 54 835 | 45 165 | 97 444 | 32 | | 28 | 54 365 | 57 197 | 42 803 | 97 168 | 32 |
| 29 | 52 314 | 54 875 | 45 125 | 97 439 | 31 | | 29 | 54 399 | 57 235 | 42 765 | 97 163 | 31 |
| 30 | 52 350 | 54 915 | 45 085 | 97 435 | 30 | | 30 | 54 433 | 57 274 | 42 726 | 97 159 | 30 |
| 31 | 52 385 | 54 955 | 45 045 | 97 430 | 29 | | 31 | 54 466 | 57 312 | 42 688 | 97 154 | 29 |
| 32 | 52 421 | 54 995 | 45 005 | 97 426 | 28 | | 32 | 54 500 | 57 351 | 42 649 | 97 149 | 28 |
| 33 | 52 456 | 55 035 | 44 965 | 97 421 | 27 | | 33 | 54 534 | 57 389 | 42 611 | 97 145 | 27 |
| 34 | 52 492 | 55 075 | 44 925 | 97 417 | 26 | | 34 | 54 567 | 57 428 | 42 572 | 97 140 | 26 |
| 35 | 52 527 | 55 115 | 44 885 | 97 412 | 25 | | 35 | 54 601 | 57 466 | 42 534 | 97 135 | 25 |
| 36 | 52 563 | 55 155 | 44 845 | 97 408 | 24 | | 36 | 54 635 | 57 504 | 42 496 | 97 130 | 24 |
| 37 | 52 598 | 55 195 | 44 805 | 97 403 | 23 | | 37 | 54 668 | 57 543 | 42 457 | 97 126 | 23 |
| 38 | 52 634 | 55 235 | 44 765 | 97 399 | 22 | | 38 | 54 702 | 57 581 | 42 419 | 97 121 | 22 |
| 39 | 52 669 | 55 275 | 44 725 | 97 394 | 21 | | 39 | 54 735 | 57 619 | 42 381 | 97 116 | 21 |
| 40 | 52 705 | 55 315 | 44 685 | 97 390 | 20 | | 40 | 54 769 | 57 658 | 42 342 | 97 111 | 20 |
| 41 | 52 740 | 55 355 | 44 645 | 97 385 | 19 | | 41 | 54 802 | 57 696 | 42 304 | 97 107 | 19 |
| 42 | 52 775 | 55 395 | 44 605 | 97 381 | 18 | | 42 | 54 836 | 57 734 | 42 266 | 97 102 | 18 |
| 43 | 52 811 | 55 434 | 44 566 | 97 376 | 17 | | 43 | 54 869 | 57 772 | 42 228 | 97 097 | 17 |
| 44 | 52 846 | 55 474 | 44 526 | 97 372 | 16 | | 44 | 54 903 | 57 810 | 42 190 | 97 092 | 16 |
| 45 | 52 881 | 55 514 | 44 486 | 97 367 | 15 | | 45 | 54 936 | 57 849 | 42 151 | 97 087 | 15 |
| 46 | 52 916 | 55 554 | 44 446 | 97 363 | 14 | | 46 | 54 969 | 57 887 | 42 113 | 97 083 | 14 |
| 47 | 52 951 | 55 593 | 44 407 | 97 358 | 13 | | 47 | 55 003 | 57 925 | 42 075 | 97 078 | 13 |
| 48 | 52 986 | 55 633 | 44 367 | 97 353 | 12 | | 48 | 55 036 | 57 963 | 42 037 | 97 073 | 12 |
| 49 | 53 021 | 55 673 | 44 327 | 97 349 | 11 | | 49 | 55 069 | 58 001 | 41 999 | 97 068 | 11 |
| 50 | 53 056 | 55 712 | 44 288 | 97 344 | 10 | | 50 | 55 102 | 58 039 | 41 961 | 97 063 | 10 |
| 51 | 53 092 | 55 752 | 44 248 | 97 340 | 9 | | 51 | 55 136 | 58 077 | 41 923 | 97 059 | 9 |
| 52 | 53 126 | 55 791 | 44 209 | 97 335 | 8 | | 52 | 55 169 | 58 115 | 41 885 | 97 054 | 8 |
| 53 | 53 161 | 55 831 | 44 169 | 97 331 | 7 | | 53 | 55 202 | 58 153 | 41 847 | 97 049 | 7 |
| 54 | 53 196 | 55 870 | 44 130 | 97 326 | 6 | | 54 | 55 235 | 58 191 | 41 809 | 97 044 | 6 |
| 55 | 53 231 | 55 910 | 44 090 | 97 322 | 5 | | 55 | 55 268 | 58 229 | 41 771 | 97 039 | 5 |
| 56 | 53 266 | 55 949 | 44 051 | 97 317 | 4 | | 56 | 55 301 | 58 267 | 41 733 | 97 035 | 4 |
| 57 | 53 301 | 55 989 | 44 011 | 97 312 | 3 | | 57 | 55 334 | 58 304 | 41 696 | 97 030 | 3 |
| 58 | 53 336 | 56 028 | 43 972 | 97 308 | 2 | | 58 | 55 367 | 58 342 | 41 658 | 97 025 | 2 |
| 59 | 53 370 | 56 067 | 43 933 | 97 303 | 1 | | 59 | 55 400 | 58 380 | 41 620 | 97 020 | 1 |
| 60 | 53 405 | 56 107 | 43 893 | 97 299 | 0 | | 60 | 55 433 | 58 418 | 41 582 | 97 015 | 0 |
| ′ | log cos 9— | log cot 9— | log tan 10— | log sin 9— | ′ | | ′ | log cos 9— | log cot 9— | log tan 10— | log sin 9— | ′ |

| ′ | log sin | log tan | log cot | log cos | ′ | | ′ | log sin | log tan | log cot | log cos | ′ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | −9− | −9− | −10− | −9− | | | | −9− | −9− | −10− | −9− | |
| 0 | 55 433 | 58 418 | 41 582 | 97 015 | 60 | | 0 | 57 358 | 60 641 | 39 359 | 96 717 | 60 |
| 1 | 55 466 | 58 455 | 41 545 | 97 010 | 59 | | 1 | 57 389 | 60 677 | 39 323 | 96 711 | 59 |
| 2 | 55 499 | 58 493 | 41 507 | 97 005 | 58 | | 2 | 57 420 | 60 714 | 39 286 | 96 706 | 58 |
| 3 | 55 532 | 58 531 | 41 469 | 97 001 | 57 | | 3 | 57 451 | 60 750 | 39 250 | 96 701 | 57 |
| 4 | 55 564 | 58 569 | 41 431 | 96 996 | 56 | | 4 | 57 482 | 60 786 | 39 214 | 96 696 | 56 |
| 5 | 55 597 | 58 606 | 41 394 | 96 991 | 55 | | 5 | 57 514 | 60 823 | 39 177 | 96 691 | 55 |
| 6 | 55 630 | 58 644 | 41 356 | 96 986 | 54 | | 6 | 57 545 | 60 859 | 39 141 | 96 686 | 54 |
| 7 | 55 663 | 58 681 | 41 319 | 96 981 | 53 | | 7 | 57 576 | 60 895 | 39 105 | 96 681 | 53 |
| 8 | 55 695 | 58 719 | 41 281 | 96 976 | 52 | | 8 | 57 607 | 60 931 | 39 069 | 96 676 | 52 |
| 9 | 55 728 | 58 757 | 41 243 | 96 971 | 51 | | 9 | 57 638 | 60 967 | 39 033 | 96 670 | 51 |
| 10 | 55 761 | 58 794 | 41 206 | 96 966 | 50 | | 10 | 57 669 | 61 004 | 38 996 | 96 665 | 50 |
| 11 | 55 793 | 58 832 | 41 168 | 96 962 | 49 | | 11 | 57 700 | 61 040 | 38 960 | 96 660 | 49 |
| 12 | 55 826 | 58 869 | 41 131 | 96 957 | 48 | | 12 | 57 731 | 61 076 | 38 924 | 96 655 | 48 |
| 13 | 55 858 | 58 907 | 41 093 | 96 952 | 47 | | 13 | 57 762 | 61 112 | 38 888 | 96 650 | 47 |
| 14 | 55 891 | 58 944 | 41 056 | 96 947 | 46 | | 14 | 57 793 | 61 148 | 38 852 | 96 645 | 46 |
| 15 | 55 923 | 58 981 | 41 019 | 96 942 | 45 | | 15 | 57 824 | 61 184 | 38 816 | 96 640 | 45 |
| 16 | 55 956 | 59 019 | 40 981 | 96 937 | 44 | | 16 | 57 855 | 61 220 | 38 780 | 96 634 | 44 |
| 17 | 55 988 | 59 056 | 40 944 | 96 932 | 43 | | 17 | 57 885 | 61 256 | 38 744 | 96 629 | 43 |
| 18 | 56 021 | 59 094 | 40 906 | 96 927 | 42 | | 18 | 57 916 | 61 292 | 38 708 | 96 624 | 42 |
| 19 | 56 053 | 59 131 | 40 869 | 96 922 | 41 | | 19 | 57 947 | 61 328 | 38 672 | 96 619 | 41 |
| 20 | 56 085 | 59 168 | 40 832 | 96 917 | 40 | | 20 | 57 978 | 61 364 | 38 636 | 96 614 | 40 |
| 21 | 56 118 | 59 205 | 40 795 | 96 912 | 39 | | 21 | 58 008 | 61 400 | 38 600 | 96 608 | 39 |
| 22 | 56 150 | 59 243 | 40 757 | 96 907 | 38 | | 22 | 58 039 | 61 436 | 38 564 | 96 603 | 38 |
| 23 | 56 182 | 59 280 | 40 720 | 96 903 | 37 | | 23 | 58 070 | 61 472 | 38 528 | 96 598 | 37 |
| 24 | 56 215 | 59 317 | 40 683 | 96 898 | 36 | | 24 | 58 101 | 61 508 | 38·492 | 96 593 | 36 |
| 25 | 56 247 | 59 354 | 40 646 | 96 893 | 35 | | 25 | 58 131 | 61 544 | 38 456 | 96 588 | 35 |
| 26 | 56 279 | 59 391 | 40 609 | 96 888 | 34 | | 26 | 58 162 | 61 579 | 38 421 | 96 582 | 34 |
| 27 | 56 311 | 59 429 | 40 571 | 96 883 | 33 | | 27 | 58 192 | 61 615 | 38 385 | 96 577 | 33 |
| 28 | 56 343 | 59 466 | 40 534 | 96 878 | 32 | | 28 | 58 223 | 61 651 | 38 349 | 96 572 | 32 |
| 29 | 56 375 | 59 503 | 40 497 | 96 873 | 31 | | 29 | 58 253 | 61 687 | 38 313 | 96 567 | 31 |
| 30 | 56 408 | 59 540 | 40 460 | 96 868 | 30 | | 30 | 58 284 | 61 722 | 38 278 | 96 562 | 30 |
| 31 | 56 440 | 59 577 | 40 423 | 96 863 | 29 | | 31 | 58 314 | 61 758 | 38 242 | 96 556 | 29 |
| 32 | 56 472 | 59 614 | 40 386 | 96 858 | 28 | | 32 | 58 345 | 61 794 | 38 206 | 96 551 | 28 |
| 33 | 56 504 | 59 651 | 40 349 | 96 853 | 27 | | 33 | 58 375 | 61 830 | 38 170 | 96 546 | 27 |
| 34 | 56 536 | 59 688 | 40 312 | 96 848 | 26 | | 34 | 58 406 | 61 865 | 38 135 | 96 541 | 26 |
| 35 | 56 568 | 59 725 | 40 275 | 96 843 | 25 | | 35 | 58 436 | 61 901 | 38 099 | 96 535 | 25 |
| 36 | 56 599 | 59 762 | 40 238 | 96 838 | 24 | | 36 | 58 467 | 61 936 | 38 064 | 96 530 | 24 |
| 37 | 56 631 | 59 799 | 40 201 | 96 833 | 23 | | 37 | 58 497 | 61 972 | 38 028 | 96 525 | 23 |
| 38 | 56 663 | 59 835· | 40 165 | 96 828 | 22 | | 38 | 58 527 | 62 008 | 37 992 | 96 520 | 22 |
| 39 | 56 695 | 59 872 | 40 128 | 96 823 | 21 | | 39 | 58 557 | 62 043 | 37 957 | 96 514 | 21 |
| 40 | 56 727 | 59 909 | 40 091 | 96 818 | 20 | | 40 | 58 588 | 62 079 | 37 921 | 96 509 | 20 |
| 41 | 56 759 | 59 946 | 40 054 | 96 813 | 19 | | 41 | 58 618 | 62 114 | 37 886 | 96 504 | 19 |
| 42 | 56 790 | 59 983 | 40 017 | 96 808 | 18 | | 42 | 58 648 | 62 150 | 37 850 | 96 498 | 18 |
| 43 | 56 822 | 60 019 | 39 981 | 96 803 | 17 | | 43 | 58 678 | 62 185 | 37 815 | 96 493 | 17 |
| 44 | 56 854 | 60 056 | 39 944 | 96 798 | 16 | | 44 | 58 709 | 62 221 | 37 779 | 96 488 | 16 |
| 45 | 56 886 | 60 093 | 39 907 | 96 793 | 15 | | 45 | 58 739 | 62 256 | 37 744 | 96 483 | 15 |
| 46 | 56 917 | 60 130 | 39 870 | 96 788 | 14 | | 46 | 58 769 | 62 292 | 37 708 | 96 477 | 14 |
| 47 | 56 949 | 60 166 | 39 834 | 96 783 | 13 | | 47 | 58 799 | 62 327 | 37 673 | 96 472 | 13 |
| 48 | 56 980 | 60 203 | 39 797 | 96 778 | 12 | | 48 | 58 829 | 62 362 | 37 638 | 96 467 | 12 |
| 49 | 57 012 | 60 240 | 39 760 | 96 772 | 11 | | 49 | 58 859 | 62 398 | 37 602 | 96 461 | 11 |
| 50 | 57 044 | 60 276 | 39 724 | 96 767 | 10 | | 50 | 58 889 | 62 433 | 37 567 | 96 456 | 10 |
| 51 | 57 075 | 60 313 | 39 687 | 96 762 | 9 | | 51 | 58 919 | 62 468 | 37 532 | 96 451 | 9 |
| 52 | 57 107 | 60 349 | 39 651 | 96 757 | 8 | | 52 | 58 949 | 62 504 | 37 496 | 96 445 | 8 |
| 53 | 57 138 | 60 386 | 39 614 | 96 752 | 7 | | 53 | 58 979 | 62 539 | 37 461 | 96 440 | 7 |
| 54 | 57 169 | 60 422 | 39 578 | 96 747 | 6 | | 54 | 59 009 | 62 574 | 37 426 | 96 435 | 6 |
| 55 | 57 201 | 60 459 | 39 541 | 96 742 | 5 | | 55 | 59 039 | 62 609 | 37 391 | 96 429 | 5 |
| 56 | 57 232 | 60 495 | 39 505 | 96 737 | 4 | | 56 | 59 069 | 62 645 | 37 355 | 96 424 | 4 |
| 57 | 57 264 | 60 532 | 39 468 | 96 732 | 3 | | 57 | 59 098 | 62 680 | 37 320 | 96 419 | 3 |
| 58 | 57 295 | 60 568 | 39 432 | 96 727 | 2 | | 58 | 59 128 | 62 715 | 37 285 | 96 413 | 2 |
| 59 | 57 326 | 60 605 | 39 395 | 96 722 | 1 | | 59 | 59 158 | 62 750 | 37 250 | 96 408 | 1 |
| 60 | 57 358 | 60 641 | 39 359 | 96 717 | 0 | | 60 | 59 188 | 62 785 | 37 215 | 96 403 | 0 |
| | −9− | −9− | −10− | −9− | | | | −9− | −9− | −10− | −9− | |
| ′ | log cos | log cot | log tan | log sin | ′ | | ′ | log cos | log cot | log tan | log sin | ′ |

| ′ | log sin | log tan | log cot | log cos | ′ |
|---|---|---|---|---|---|
| 0 | 59 188 | 62 785 | 37 215 | 96 403 | 60 |
| 1 | 59 218 | 62 820 | 37 180 | 96 397 | 59 |
| 2 | 59 247 | 62 855 | 37 145 | 96 392 | 58 |
| 3 | 59 277 | 62 890 | 37 110 | 96 387 | 57 |
| 4 | 59 307 | 62 926 | 37 074 | 96 381 | 56 |
| 5 | 59 336 | 62 961 | 37 039 | 96 376 | 55 |
| 6 | 59 366 | 62 996 | 37 004 | 96 370 | 54 |
| 7 | 59 396 | 63 031 | 36 969 | 96 365 | 53 |
| 8 | 59 425 | 63 066 | 36 934 | 96 360 | 52 |
| 9 | 59 455 | 63 101 | 36 899 | 96 354 | 51 |
| 10 | 59 484 | 63 135 | 36 865 | 96 349 | 50 |
| 11 | 59 514 | 63 170 | 36 830 | 96 343 | 49 |
| 12 | 59 543 | 63 205 | 36 795 | 96 338 | 48 |
| 13 | 59 573 | 63 240 | 36 760 | 96 333 | 47 |
| 14 | 59 602 | 63 275 | 36 725 | 96 327 | 46 |
| 15 | 59 632 | 63 310 | 36 690 | 96 322 | 45 |
| 16 | 59 661 | 63 345 | 36 655 | 96 316 | 44 |
| 17 | 59 690 | 63 379 | 36 621 | 96 311 | 43 |
| 18 | 59 720 | 63 414 | 36 586 | 96 305 | 42 |
| 19 | 59 749 | 63 449 | 36 551 | 96 300 | 41 |
| 20 | 59 778 | 63 484 | 36 516 | 96 294 | 40 |
| 21 | 59 808 | 63 519 | 36 481 | 96 289 | 39 |
| 22 | 59 837 | 63 553 | 36 447 | 96 284 | 38 |
| 23 | 59 866 | 63 588 | 36 412 | 96 278 | 37 |
| 24 | 59 895 | 63 623 | 36 377 | 96 273 | 36 |
| 25 | 59 924 | 63 657 | 36 343 | 96 267 | 35 |
| 26 | 59 954 | 63 692 | 36 308 | 96 262 | 34 |
| 27 | 59 983 | 63 726 | 36 274 | 96 256 | 33 |
| 28 | 60 012 | 63 761 | 36 239 | 96 251 | 32 |
| 29 | 60 041 | 63 796 | 36 204 | 96 245 | 31 |
| 30 | 60 070 | 63 830 | 36 170 | 96 240 | 30 |
| 31 | 60 099 | 63 865 | 36 135 | 96 234 | 29 |
| 32 | 60 128 | 63 899 | 36 101 | 96 229 | 28 |
| 33 | 60 157 | 63 934 | 36 066 | 96 223 | 27 |
| 34 | 60 186 | 63 968 | 36 032 | 96 218 | 26 |
| 35 | 60 215 | 64 003 | 35 997 | 96 212 | 25 |
| 36 | 60 244 | 64 037 | 35 963 | 96 207 | 24 |
| 37 | 60 273 | 64 072 | 35 928 | 96 201 | 23 |
| 38 | 60 302 | 64 106 | 35 894 | 96 196 | 22 |
| 39 | 60 331 | 64 140 | 35 860 | 96 190 | 21 |
| 40 | 60 359 | 64 175 | 35 825 | 96 185 | 20 |
| 41 | 60 388 | 64 209 | 35 791 | 96 179 | 19 |
| 42 | 60 417 | 64 243 | 35 757 | 96 174 | 18 |
| 43 | 60 446 | 64 278 | 35 722 | 96 168 | 17 |
| 44 | 60 474 | 64 312 | 35 688 | 96 162 | 16 |
| 45 | 60 503 | 64 346 | 35 654 | 96 157 | 15 |
| 46 | 60 532 | 64 381 | 35 619 | 96 151 | 14 |
| 47 | 60 561 | 64 415 | 35 585 | 96 146 | 13 |
| 48 | 60 589 | 64 449 | 35 551 | 96 140 | 12 |
| 49 | 60 618 | 64 483 | 35 517 | 96 135 | 11 |
| 50 | 60 646 | 64 517 | 35 483 | 96 129 | 10 |
| 51 | 60 675 | 64 552 | 35 448 | 96 123 | 9 |
| 52 | 60 704 | 64 586 | 35 414 | 96 118 | 8 |
| 53 | 60 732 | 64 620 | 35 380 | 96 112 | 7 |
| 54 | 60 761 | 64 654 | 35 346 | 96 107 | 6 |
| 55 | 60 789 | 64 688 | 35 312 | 96 101 | 5 |
| 56 | 60 818 | 64 722 | 35 278 | 96 095 | 4 |
| 57 | 60 846 | 64 756 | 35 244 | 96 090 | 3 |
| 58 | 60 875 | 64 790 | 35 210 | 96 084 | 2 |
| 59 | 60 903 | 64 824 | 35 176 | 96 079 | 1 |
| 60 | 60 931 | 64 858 | 35 142 | 96 073 | 0 |
| ′ | log cos | log cot | log tan | log sin | ′ |

| ′ | log sin | log tan | log cot | log cos | ′ |
|---|---|---|---|---|---|
| 0 | 60 931 | 64 858 | 35 142 | 96 073 | 60 |
| 1 | 60 960 | 64 892 | 35 108 | 96 067 | 59 |
| 2 | 60 988 | 64 926 | 35 074 | 96 062 | 58 |
| 3 | 61 016 | 64 960 | 35 040 | 96 056 | 57 |
| 4 | 61 045 | 64 994 | 35 006 | 96 050 | 56 |
| 5 | 61 073 | 65 028 | 34 972 | 96 045 | 55 |
| 6 | 61 101 | 65 062 | 34 938 | 96 039 | 54 |
| 7 | 61 129 | 65 096 | 34 904 | 96 034 | 53 |
| 8 | 61 158 | 65 130 | 34 870 | 96 028 | 52 |
| 9 | 61 186 | 65 164 | 34 836 | 96 022 | 51 |
| 10 | 61 214 | 65 197 | 34 803 | 96 017 | 50 |
| 11 | 61 242 | 65 231 | 34 769 | 96 011 | 49 |
| 12 | 61 270 | 65 265 | 34 735 | 96 005 | 48 |
| 13 | 61 298 | 65 299 | 34 701 | 96 000 | 47 |
| 14 | 61 326 | 65 333 | 34 667 | 95 994 | 46 |
| 15 | 61 354 | 65 366 | 34 634 | 95 988 | 45 |
| 16 | 61 382 | 65 400 | 34 600 | 95 982 | 44 |
| 17 | 61 411 | 65 434 | 34 566 | 95 977 | 43 |
| 18 | 61 438 | 65 467 | 34 533 | 95 971 | 42 |
| 19 | 61 466 | 65 501 | 34 499 | 95 965 | 41 |
| 20 | 61 494 | 65 535 | 34 465 | 95 960 | 40 |
| 21 | 61 522 | 65 568 | 34 432 | 95 954 | 39 |
| 22 | 61 550 | 65 602 | 34 398 | 95 948 | 38 |
| 23 | 61 578 | 65 636 | 34 364 | 95 942 | 37 |
| 24 | 61 606 | 65 669 | 34 331 | 95 937 | 36 |
| 25 | 61 634 | 65 703 | 34 297 | 95 931 | 35 |
| 26 | 61 662 | 65 736 | 34 264 | 95 925 | 34 |
| 27 | 61 689 | 65 770 | 34 230 | 95 920 | 33 |
| 28 | 61 717 | 65 803 | 34 197 | 95 914 | 32 |
| 29 | 61 745 | 65 837 | 34 163 | 95 908 | 31 |
| 30 | 61 773 | 65 870 | 34 130 | 95 902 | 30 |
| 31 | 61 800 | 65 904 | 34 096 | 95 897 | 29 |
| 32 | 61 828 | 65 937 | 34 063 | 95 891 | 28 |
| 33 | 61 856 | 65 971 | 34 029 | 95 885 | 27 |
| 34 | 61 883 | 66 004 | 33 996 | 95 879 | 26 |
| 35 | 61 911 | 66 038 | 33 962 | 95 873 | 25 |
| 36 | 61 939 | 66 071 | 33 929 | 95 868 | 24 |
| 37 | 61 966 | 66 104 | 33 896 | 95 862 | 23 |
| 38 | 61 994 | 66 138 | 33 862 | 95 856 | 22 |
| 39 | 62 021 | 66 171 | 33 829 | 95 850 | 21 |
| 40 | 62 049 | 66 204 | 33 796 | 95 844 | 20 |
| 41 | 62 076 | 66 238 | 33 762 | 95 839 | 19 |
| 42 | 62 104 | 66 271 | 33 729 | 95 833 | 18 |
| 43 | 62 131 | 66 304 | 33 696 | 95 827 | 17 |
| 44 | 62 159 | 66 337 | 33 663 | 95 821 | 16 |
| 45 | 62 186 | 66 371 | 33 629 | 95 815 | 15 |
| 46 | 62 214 | 66 404 | 33 596 | 95 810 | 14 |
| 47 | 62 241 | 66 437 | 33 563 | 95 804 | 13 |
| 48 | 62 268 | 66 470 | 33 530 | 95 798 | 12 |
| 49 | 62 296 | 66 503 | 33 497 | 95 792 | 11 |
| 50 | 62 323 | 66 537 | 33 463 | 95 786 | 10 |
| 51 | 62 350 | 66 570 | 33 430 | 95 780 | 9 |
| 52 | 62 377 | 66 603 | 33 397 | 95 775 | 8 |
| 53 | 62 405 | 66 636 | 33 364 | 95 769 | 7 |
| 54 | 62 432 | 66 669 | 33 331 | 95 763 | 6 |
| 55 | 62 459 | 66 702 | 33 298 | 95 757 | 5 |
| 56 | 62 486 | 66 735 | 33 265 | 95 751 | 4 |
| 57 | 62 513 | 66 768 | 33 232 | 95 745 | 3 |
| 58 | 62 541 | 66 801 | 33 199 | 95 739 | 2 |
| 59 | 62 568 | 66 834 | 33 166 | 95 733 | 1 |
| 60 | 62 595 | 66 867 | 33 133 | 95 728 | 0 |
| ′ | log cos | log cot | log tan | log sin | ′ |

| ′ | log sin | log tan | log cot | log cos | ′ |
|---|---|---|---|---|---|
|  | -9- | -9- | -10- | -9- |  |
| 0 | 62 595 | 66 867 | 33 133 | 95 728 | 60 |
| 1 | 62 622 | 66 900 | 33 100 | 95 722 | 59 |
| 2 | 62 649 | 66 933 | 33 067 | 95 716 | 58 |
| 3 | 62 676 | 66 966 | 33 034 | 95 710 | 57 |
| 4 | 62 703 | 66 999 | 33 001 | 95 704 | 56 |
| 5 | 62 730 | 67 032 | 32 968 | 95 698 | 55 |
| 6 | 62 757 | 67 065 | 32 935 | 95 692 | 54 |
| 7 | 62 784 | 67 098 | 32 902 | 95 686 | 53 |
| 8 | 62 811 | 67 131 | 32 869 | 95 680 | 52 |
| 9 | 62 838 | 67 163 | 32 837 | 95 674 | 51 |
| 10 | 62 865 | 67 196 | 32 804 | 95 668 | 50 |
| 11 | 62 892 | 67 229 | 32 771 | 95 663 | 49 |
| 12 | 62 918 | 67 262 | 32 738 | 95 657 | 48 |
| 13 | 62 945 | 67 295 | 32 705 | 95 651 | 47 |
| 14 | 62 972 | 67 327 | 32 673 | 95 645 | 46 |
| 15 | 62 999 | 67 360 | 32 640 | 95 639 | 45 |
| 16 | 63 026 | 67 393 | 32 607 | 95 633 | 44 |
| 17 | 63 052 | 67 426 | 32 574 | 95 627 | 43 |
| 18 | 63 079 | 67 458 | 32 542 | 95 621 | 42 |
| 19 | 63 106 | 67 491 | 32 509 | 95 615 | 41 |
| 20 | 63 133 | 67 524 | 32 476 | 95 609 | 40 |
| 21 | 63 159 | 67 556 | 32 444 | 95 603 | 39 |
| 22 | 63 186 | 67 589 | 32 411 | 95 597 | 38 |
| 23 | 63 213 | 67 622 | 32 378 | 95 591 | 37 |
| 24 | 63 239 | 67 654 | 32 346 | 95 585 | 36 |
| 25 | 63 266 | 67 687 | 32 313 | 95 579 | 35 |
| 26 | 63 292 | 67 719 | 32 281 | 95 573 | 34 |
| 27 | 63 319 | 67 752 | 32 248 | 95 567 | 33 |
| 28 | 63 345 | 67 785 | 32 215 | 95 561 | 32 |
| 29 | 63 372 | 67 817 | 32 183 | 95 555 | 31 |
| 30 | 63 398 | 67 850 | 32 150 | 95 549 | 30 |
| 31 | 63 425 | 67 882 | 32 118 | 95 543 | 29 |
| 32 | 63 451 | 67 915 | 32 085 | 95 537 | 28 |
| 33 | 63 478 | 67 947 | 32 053 | 95 531 | 27 |
| 34 | 63 504 | 67 980 | 32 020 | 95 525 | 26 |
| 35 | 63 531 | 68 012 | 31 988 | 95 519 | 25 |
| 36 | 63 557 | 68 044 | 31 956 | 95 513 | 24 |
| 37 | 63 583 | 68 077 | 31 923 | 95 507 | 23 |
| 38 | 63 610 | 68 109 | 31 891 | 95 500 | 22 |
| 39 | 63 636 | 68 142 | 31 858 | 95 494 | 21 |
| 40 | 63 662 | 68 174 | 31 826 | 95 488 | 20 |
| 41 | 63 689 | 68 206 | 31 794 | 95 482 | 19 |
| 42 | 63 715 | 68 239 | 31 761 | 95 476 | 18 |
| 43 | 63 741 | 68 271 | 31 729 | 95 470 | 17 |
| 44 | 63 767 | 68 303 | 31 697 | 95 464 | 16 |
| 45 | 63 794 | 68 336 | 31 664 | 95 458 | 15 |
| 46 | 63 820 | 68 368 | 31 632 | 95 452 | 14 |
| 47 | 63 846 | 68 400 | 31 600 | 95 446 | 13 |
| 48 | 63 872 | 68 432 | 31 568 | 95 440 | 12 |
| 49 | 63 898 | 68 465 | 31 535 | 95 434 | 11 |
| 50 | 63 924 | 68 497 | 31 503 | 95 427 | 10 |
| 51 | 63 950 | 68 529 | 31 471 | 95 421 | 9 |
| 52 | 63 976 | 68 561 | 31 439 | 95 415 | 8 |
| 53 | 64 002 | 68 593 | 31 407 | 95 409 | 7 |
| 54 | 64 028 | 68 626 | 31 374 | 95 403 | 6 |
| 55 | 64 054 | 68 658 | 31 342 | 95 397 | 5 |
| 56 | 64 080 | 68 690 | 31 310 | 95 391 | 4 |
| 57 | 64 106 | 68 722 | 31 278 | 95 384 | 3 |
| 58 | 64 132 | 68 754 | 31 246 | 95 378 | 2 |
| 59 | 64 158 | 68 786 | 31 214 | 95 372 | 1 |
| 60 | 64 184 | 68 818 | 31 182 | 95 366 | 0 |
|  | -9- | -9- | -10- | -9- |  |
| ′ | log cos | log cot | log tan | log sin | ′ |

| ′ | log sin | log tan | log cot | log cos | ′ |
|---|---|---|---|---|---|
|  | -9- | -9- | -10- | -9- |  |
| 0 | 64 184 | 68 818 | 31 182 | 95 366 | 60 |
| 1 | 64 210 | 68 850 | 31 150 | 95 360 | 59 |
| 2 | 64 236 | 68 882 | 31 118 | 95 354 | 58 |
| 3 | 64 262 | 68 914 | 31 086 | 95 348 | 57 |
| 4 | 64 288 | 68 946 | 31 054 | 95 341 | 56 |
| 5 | 64 313 | 68 978 | 31 022 | 95 335 | 55 |
| 6 | 64 339 | 69 010 | 30 990 | 95 329 | 54 |
| 7 | 64 365 | 69 042 | 30 958 | 95 323 | 53 |
| 8 | 64 391 | 69 074 | 30 926 | 95 317 | 52 |
| 9 | 64 417 | 69 106 | 30 894 | 95 310 | 51 |
| 10 | 64 442 | 69 138 | 30 862 | 95 304 | 50 |
| 11 | 64 468 | 69 170 | 30 830 | 95 298 | 49 |
| 12 | 64 494 | 69 202 | 30 798 | 95 292 | 48 |
| 13 | 64 519 | 69 234 | 30 766 | 95 286 | 47 |
| 14 | 64 545 | 69 266 | 30 734 | 95 279 | 46 |
| 15 | 64 571 | 69 298 | 30 702 | 95 273 | 45 |
| 16 | 64 596 | 69 329 | 30 671 | 95 267 | 44 |
| 17 | 64 622 | 69 361 | 30 639 | 95 261 | 43 |
| 18 | 64 647 | 69 393 | 30 607 | 95 254 | 42 |
| 19 | 64 673 | 69 425 | 30 575 | 95 248 | 41 |
| 20 | 64 698 | 69 457 | 30 543 | 95 242 | 40 |
| 21 | 64 724 | 69 488 | 30 512 | 95 236 | 39 |
| 22 | 64 749 | 69 520 | 30 480 | 95 229 | 38 |
| 23 | 64 775 | 69 552 | 30 448 | 95 223 | 37 |
| 24 | 64 800 | 69 584 | 30 416 | 95 217 | 36 |
| 25 | 64 826 | 69 615 | 30 385 | 95 211 | 35 |
| 26 | 64 851 | 69 647 | 30 353 | 95 204 | 34 |
| 27 | 64 877 | 69 679 | 30 321 | 95 198 | 33 |
| 28 | 64 902 | 69 710 | 30 290 | 95 192 | 32 |
| 29 | 64 927 | 69 742 | 30 258 | 95 185 | 31 |
| 30 | 64 953 | 69 774 | 30 226 | 95 179 | 30 |
| 31 | 64 978 | 69 805 | 30 195 | 95 173 | 29 |
| 32 | 65 003 | 69 837 | 30 163 | 95 167 | 28 |
| 33 | 65 029 | 69 868 | 30 132 | 95 160 | 27 |
| 34 | 65 054 | 69 900 | 30 100 | 95 154 | 26 |
| 35 | 65 079 | 69 932 | 30 068 | 95 148 | 25 |
| 36 | 65 104 | 69 963 | 30 037 | 95 141 | 24 |
| 37 | 65 130 | 69 995 | 30 005 | 95 135 | 23 |
| 38 | 65 155 | 70 026 | 29 974 | 95 129 | 22 |
| 39 | 65 180 | 70 058 | 29 942 | 95 122 | 21 |
| 40 | 65 205 | 70 089 | 29 911 | 95 116 | 20 |
| 41 | 65 230 | 70 121 | 29 879 | 95 110 | 19 |
| 42 | 65 255 | 70 152 | 29 848 | 95 103 | 18 |
| 43 | 65 281 | 70 184 | 29 816 | 95 097 | 17 |
| 44 | 65 306 | 70 215 | 29 785 | 95 090 | 16 |
| 45 | 65 331 | 70 247 | 29 753 | 95 084 | 15 |
| 46 | 65 356 | 70 278 | 29 722 | 95 078 | 14 |
| 47 | 65 381 | 70 309 | 29 691 | 95 071 | 13 |
| 48 | 65 406 | 70 341 | 29 659 | 95 065 | 12 |
| 49 | 65 431 | 70 372 | 29 628 | 95 059 | 11 |
| 50 | 65 456 | 70 404 | 29 596 | 95 052 | 10 |
| 51 | 65 481 | 70 435 | 29 565 | 95 046 | 9 |
| 52 | 65 506 | 70 466 | 29 534 | 95 039 | 8 |
| 53 | 65 531 | 70 498 | 29 502 | 95 033 | 7 |
| 54 | 65 556 | 70 529 | 29 471 | 95 027 | 6 |
| 55 | 65 580 | 70 560 | 29 440 | 95 020 | 5 |
| 56 | 65 605 | 70 592 | 29 408 | 95 014 | 4 |
| 57 | 65 630 | 70 623 | 29 377 | 95 007 | 3 |
| 58 | 65 655 | 70 654 | 29 346 | 95 001 | 2 |
| 59 | 65 680 | 70 685 | 29 315 | 94 995 | 1 |
| 60 | 65 705 | 70 717 | 29 283 | 94 988 | 0 |
|  | -9- | -9- | -10- | -9- |  |
| ′ | log cos | log cot | log tan | log sin | ′ |

| ′ | log sin −9− | log tan −9− | log cot −10− | log cos −0− | ′ |
|---|---|---|---|---|---|
| 0 | 65 705 | 70 717 | 29 283 | 94 988 | 60 |
| 1 | 65 729 | 70 748 | 29 252 | 94 982 | 59 |
| 2 | 65 754 | 70 779 | 29 221 | 94 975 | 58 |
| 3 | 65 779 | 70 810 | 29 190 | 94 969 | 57 |
| 4 | 65 804 | 70 841 | 29 159 | 94 962 | 56 |
| 5 | 65 828 | 70 873 | 29 127 | 94 956 | 55 |
| 6 | 65 853 | 70 904 | 29 096 | 94 949 | 54 |
| 7 | 65 878 | 70 935 | 29 065 | 94 943 | 53 |
| 8 | 65 902 | 70 966 | 29 034 | 94 936 | 52 |
| 9 | 65 927 | 70 997 | 29 003 | 94 930 | 51 |
| 10 | 65 952 | 71 028 | 28 972 | 94 923 | 50 |
| 11 | 65 976 | 71 059 | 28 941 | 94 917 | 49 |
| 12 | 66 001 | 71 090 | 28 910 | 94 911 | 48 |
| 13 | 66 025 | 71 121 | 28 879 | 94 904 | 47 |
| 14 | 66 050 | 71 153 | 28 847 | 94 898 | 46 |
| 15 | 66 075 | 71 184 | 28 816 | 94 891 | 45 |
| 16 | 66 099 | 71 215 | 28 785 | 94 885 | 44 |
| 17 | 66 124 | 71 246 | 28 754 | 94 878 | 43 |
| 18 | 66 148 | 71 277 | 28 723 | 94 871 | 42 |
| 19 | 66 173 | 71 308 | 28 692 | 94 865 | 41 |
| 20 | 66 197 | 71 339 | 28 661 | 94 858 | 40 |
| 21 | 66 221 | 71 370 | 28 630 | 94 852 | 39 |
| 22 | 66 246 | 71 401 | 28 599 | 94 845 | 38 |
| 23 | 66 270 | 71 431 | 28 569 | 94 839 | 37 |
| 24 | 66 295 | 71 462 | 28 538 | 94 832 | 36 |
| 25 | 66 319 | 71 493 | 28 507 | 94 826 | 35 |
| 26 | 66 343 | 71 524 | 28 476 | 94 819 | 34 |
| 27 | 66 368 | 71 555 | 28 445 | 94 813 | 33 |
| 28 | 66 392 | 71 586 | 28 414 | 94 806 | 32 |
| 29 | 66 416 | 71 617 | 28 383 | 94 799 | 31 |
| 30 | 66 441 | 71 648 | 28 352 | 94 793 | 30 |
| 31 | 66 465 | 71 679 | 28 321 | 94 786 | 29 |
| 32 | 66 489 | 71 709 | 28 291 | 94 780 | 28 |
| 33 | 66 513 | 71 740 | 28 260 | 94 773 | 27 |
| 34 | 66 537 | 71 771 | 28 229 | 94 767 | 26 |
| 35 | 66 562 | 71 802 | 28 198 | 94 760 | 25 |
| 36 | 66 586 | 71 833 | 28 167 | 94 753 | 24 |
| 37 | 66 610 | 71 863 | 28 137 | 94 747 | 23 |
| 38 | 66 634 | 71 894 | 28 106 | 94 740 | 22 |
| 39 | 66 658 | 71 925 | 28 075 | 94 734 | 21 |
| 40 | 66 682 | 71 955 | 28 045 | 94 727 | 20 |
| 41 | 66 706 | 71 986 | 28 014 | 94 720 | 19 |
| 42 | 66 731 | 72 017 | 27 983 | 94 714 | 18 |
| 43 | 66 755 | 72 048 | 27 952 | 94 707 | 17 |
| 44 | 66 779 | 72 078 | 27 922 | 94 700 | 16 |
| 45 | 66 803 | 72 109 | 27 891 | 94 694 | 15 |
| 46 | 66 827 | 72 140 | 27 860 | 94 687 | 14 |
| 47 | 66 851 | 72 170 | 27 830 | 94 680 | 13 |
| 48 | 66 875 | 72 201 | 27 799 | 94 674 | 12 |
| 49 | 66 899 | 72 231 | 27 769 | 94 667 | 11 |
| 50 | 66 922 | 72 262 | 27 738 | 94 660 | 10 |
| 51 | 66 946 | 72 293 | 27 707 | 94 654 | 9 |
| 52 | 66 970 | 72 323 | 27 677 | 94 647 | 8 |
| 53 | 66 994 | 72 354 | 27 646 | 94 640 | 7 |
| 54 | 67 018 | 72 384 | 27 616 | 94 634 | 6 |
| 55 | 67 042 | 72 415 | 27 585 | 94 627 | 5 |
| 56 | 67 066 | 72 445 | 27 555 | 94 620 | 4 |
| 57 | 67 090 | 72 476 | 27 524 | 94 614 | 3 |
| 58 | 67 113 | 72 506 | 27 494 | 94 607 | 2 |
| 59 | 67 137 | 72 537 | 27 463 | 94 600 | 1 |
| 60 | 67 161 | 72 567 | 27 433 | 94 593 | 0 |
| ′ | log cos −9− | log cot −9− | log tan −10− | log sin −9− | ′ |

| ′ | log sin −9− | log tan −9− | log cot −10− | log cos −0− | ′ |
|---|---|---|---|---|---|
| 0 | 67 161 | 72 567 | 27 433 | 94 593 | 60 |
| 1 | 67 185 | 72 598 | 27 402 | 94 587 | 59 |
| 2 | 67 208 | 72 628 | 27 372 | 94 580 | 58 |
| 3 | 67 232 | 72 659 | 27 341 | 94 573 | 57 |
| 4 | 67 256 | 72 689 | 27 311 | 94 567 | 56 |
| 5 | 67 280 | 72 720 | 27 280 | 94 560 | 55 |
| 6 | 67 303 | 72 750 | 27 250 | 94 553 | 54 |
| 7 | 67 327 | 72 780 | 27 220 | 94 546 | 53 |
| 8 | 67 350 | 72 811 | 27 189 | 94 540 | 52 |
| 9 | 67 374 | 72 841 | 27 159 | 94 533 | 51 |
| 10 | 67 398 | 72 872 | 27 128 | 94 526 | 50 |
| 11 | 67 421 | 72 902 | 27 098 | 94 519 | 49 |
| 12 | 67 445 | 72 932 | 27 068 | 94 513 | 48 |
| 13 | 67 468 | 72 963 | 27 037 | 94 506 | 47 |
| 14 | 67 492 | 72 993 | 27 007 | 94 499 | 46 |
| 15 | 67 515 | 73 023 | 26 977 | 94 492 | 45 |
| 16 | 67 539 | 73 054 | 26 946 | 94 485 | 44 |
| 17 | 67 562 | 73 084 | 26 916 | 94 479 | 43 |
| 18 | 67 586 | 73 114 | 26 886 | 94 472 | 42 |
| 19 | 67 609 | 73 144 | 26 856 | 94 465 | 41 |
| 20 | 67 633 | 73 175 | 26 825 | 94 458 | 40 |
| 21 | 67 656 | 73 205 | 26 795 | 94 451 | 39 |
| 22 | 67 680 | 73 235 | 26 765 | 94 445 | 38 |
| 23 | 67 703 | 73 265 | 26 735 | 94 438 | 37 |
| 24 | 67 726 | 73 295 | 26 705 | 94 431 | 36 |
| 25 | 67 750 | 73 326 | 26 674 | 94 424 | 35 |
| 26 | 67 773 | 73 356 | 26 644 | 94 417 | 34 |
| 27 | 67 796 | 73 386 | 26 614 | 94 410 | 33 |
| 28 | 67 820 | 73 416 | 26 584 | 94 404 | 32 |
| 29 | 67 843 | 73 446 | 26 554 | 94 397 | 31 |
| 30 | 67 866 | 73 476 | 26 524 | 94 390 | 30 |
| 31 | 67 890 | 73 507 | 26 493 | 94 383 | 29 |
| 32 | 67 913 | 73 537 | 26 463 | 94 376 | 28 |
| 33 | 67 936 | 73 567 | 26 433 | 94 369 | 27 |
| 34 | 67 959 | 73 597 | 26 403 | 94 362 | 26 |
| 35 | 67 982 | 73 627 | 26 373 | 94 355 | 25 |
| 36 | 68 006 | 73 657 | 26 343 | 94 349 | 24 |
| 37 | 68 029 | 73 687 | 26 313 | 94 342 | 23 |
| 38 | 68 052 | 73 717 | 26 283 | 94 335 | 22 |
| 39 | 68 075 | 73 747 | 26 253 | 94 328 | 21 |
| 40 | 68 098 | 73 777 | 26 223 | 94 321 | 20 |
| 41 | 68 121 | 73 807 | 26 193 | 94 314 | 19 |
| 42 | 68 144 | 73 837 | 26 163 | 94 307 | 18 |
| 43 | 68 167 | 73 867 | 26 133 | 94 300 | 17 |
| 44 | 68 190 | 73 897 | 26 103 | 94 293 | 16 |
| 45 | 68 213 | 73 927 | 26 073 | 94 286 | 15 |
| 46 | 68 237 | 73 957 | 26 043 | 94 279 | 14 |
| 47 | 68 260 | 73 987 | 26 013 | 94 273 | 13 |
| 48 | 68 283 | 74 017 | 25 983 | 94 266 | 12 |
| 49 | 68 305 | 74 047 | 25 953 | 94 259 | 11 |
| 50 | 68 328 | 74 077 | 25 923 | 94 252 | 10 |
| 51 | 68 351 | 74 107 | 25 893 | 94 245 | 9 |
| 52 | 68 374 | 74 137 | 25 863 | 94 238 | 8 |
| 53 | 68 397 | 74 166 | 25 834 | 94 231 | 7 |
| 54 | 68 420 | 74 196 | 25 804 | 94 224 | 6 |
| 55 | 68 443 | 74 226 | 25 774 | 94 217 | 5 |
| 56 | 68 466 | 74 256 | 25 744 | 94 210 | 4 |
| 57 | 68 489 | 74 286 | 25 714 | 94 203 | 3 |
| 58 | 68 512 | 74 316 | 25 684 | 94 196 | 2 |
| 59 | 68 534 | 74 345 | 25 655 | 94 189 | 1 |
| 60 | 68 557 | 74 375 | 25 625 | 94 182 | 0 |
| ′ | log cos −9− | log cot −9− | log tan −10− | log sin −9− | ′ |

## 29°

| ′ | log sin 9 | log tan 9 | log cot 10 | log cos 9 | ′ |
|---|---|---|---|---|---|
| 0 | 68 557 | 74 375 | 25 625 | 94 182 | 60 |
| 1 | 68 580 | 74 405 | 25 595 | 94 175 | 59 |
| 2 | 68 603 | 74 435 | 25 565 | 94 168 | 58 |
| 3 | 68 625 | 74 465 | 25 535 | 94 161 | 57 |
| 4 | 68 648 | 74 494 | 25 506 | 94 154 | 56 |
| 5 | 68 671 | 74 524 | 25 476 | 94 147 | 55 |
| 6 | 68 694 | 74 554 | 25 446 | 94 140 | 54 |
| 7 | 68 716 | 74 583 | 25 417 | 94 133 | 53 |
| 8 | 68 739 | 74 613 | 25 387 | 94 126 | 52 |
| 9 | 68 762 | 74 643 | 25 357 | 94 119 | 51 |
| 10 | 68 784 | 74 673 | 25 327 | 94 112 | 50 |
| 11 | 68 807 | 74 702 | 25 298 | 94 105 | 49 |
| 12 | 68 829 | 74 732 | 25 268 | 94 098 | 48 |
| 13 | 68 852 | 74 762 | 25 238 | 94 090 | 47 |
| 14 | 68 875 | 74 791 | 25 209 | 94 083 | 46 |
| 15 | 68 897 | 74 821 | 25 179 | 94 076 | 45 |
| 16 | 68 920 | 74 851 | 25 149 | 94 069 | 44 |
| 17 | 68 942 | 74 880 | 25 120 | 94 062 | 43 |
| 18 | 68 965 | 74 910 | 25 090 | 94 055 | 42 |
| 19 | 68 987 | 74 939 | 25 061 | 94 048 | 41 |
| 20 | 69 010 | 74 969 | 25 031 | 94 041 | 40 |
| 21 | 69 032 | 74 998 | 25 002 | 94 034 | 39 |
| 22 | 69 055 | 75 028 | 24 972 | 94 027 | 38 |
| 23 | 69 077 | 75 058 | 24 942 | 94 020 | 37 |
| 24 | 69 100 | 75 087 | 24 913 | 94 012 | 36 |
| 25 | 69 122 | 75 117 | 24 883 | 94 005 | 35 |
| 26 | 69 144 | 75 146 | 24 854 | 93 998 | 34 |
| 27 | 69 167 | 75 176 | 24 824 | 93 991 | 33 |
| 28 | 69 189 | 75 205 | 24 795 | 93 984 | 32 |
| 29 | 69 212 | 75 235 | 24 765 | 93 977 | 31 |
| 30 | 69 234 | 75 264 | 24 736 | 93 970 | 30 |
| 31 | 69 256 | 75 294 | 24 706 | 93 963 | 29 |
| 32 | 69 279 | 75 323 | 24 677 | 93 955 | 28 |
| 33 | 69 301 | 75 353 | 24 647 | 93 948 | 27 |
| 34 | 69 323 | 75 382 | 24 618 | 93 941 | 26 |
| 35 | 69 345 | 75 411 | 24 589 | 93 934 | 25 |
| 36 | 69 368 | 75 441 | 24 559 | 93 927 | 24 |
| 37 | 69 390 | 75 470 | 24 530 | 93 920 | 23 |
| 38 | 69 412 | 75 500 | 24 500 | 93 912 | 22 |
| 39 | 69 434 | 75 529 | 24 471 | 93 905 | 21 |
| 40 | 69 456 | 75 558 | 24 442 | 93 898 | 20 |
| 41 | 69 479 | 75 588 | 24 412 | 93 891 | 19 |
| 42 | 69 501 | 75 617 | 24 383 | 93 884 | 18 |
| 43 | 69 523 | 75 647 | 24 353 | 93 876 | 17 |
| 44 | 69 545 | 75 676 | 24 324 | 93 869 | 16 |
| 45 | 69 567 | 75 705 | 24 295 | 93 862 | 15 |
| 46 | 69 589 | 75 735 | 24 265 | 93 855 | 14 |
| 47 | 69 611 | 75 764 | 24 236 | 93 847 | 13 |
| 48 | 69 633 | 75 793 | 24 207 | 93 840 | 12 |
| 49 | 69 655 | 75 822 | 24 178 | 93 833 | 11 |
| 50 | 69 677 | 75 852 | 24 148 | 93 826 | 10 |
| 51 | 69 699 | 75 881 | 24 119 | 93 819 | 9 |
| 52 | 69 721 | 75 910 | 24 090 | 93 811 | 8 |
| 53 | 69 743 | 75 939 | 24 061 | 93 804 | 7 |
| 54 | 69 765 | 75 969 | 24 031 | 93 797 | 6 |
| 55 | 69 787 | 75 998 | 24 002 | 93 789 | 5 |
| 56 | 69 809 | 76 027 | 23 973 | 93 782 | 4 |
| 57 | 69 831 | 76 056 | 23 944 | 93 775 | 3 |
| 58 | 69 853 | 76 086 | 23 914 | 93 768 | 2 |
| 59 | 69 875 | 76 115 | 23 885 | 93 760 | 1 |
| 60 | 69 897 | 76 144 | 23 856 | 93 753 | 0 |
| ′ | log cos 9 | log cot 9 | log tan 10 | log sin 9 | ′ |

**60°**

## 30°

| ′ | log sin 9 | log tan 9 | log cot 10 | log cos 9 | ′ |
|---|---|---|---|---|---|
| 0 | 69 897 | 76 144 | 23 856 | 93 753 | 60 |
| 1 | 69 919 | 76 173 | 23 827 | 93 746 | 59 |
| 2 | 69 941 | 76 202 | 23 798 | 93 738 | 58 |
| 3 | 69 963 | 76 231 | 23 769 | 93 731 | 57 |
| 4 | 69 984 | 76 261 | 23 739 | 93 724 | 56 |
| 5 | 70 006 | 76 290 | 23 710 | 93 717 | 55 |
| 6 | 70 028 | 76 319 | 23 681 | 93 709 | 54 |
| 7 | 70 050 | 76 348 | 28 652 | 93 702 | 53 |
| 8 | 70 072 | 76 377 | 23 623 | 93 695 | 52 |
| 9 | 70 093 | 76 406 | 23 594 | 93 687 | 51 |
| 10 | 70 115 | 76 435 | 23 565 | 93 680 | 50 |
| 11 | 70 137 | 76 464 | 23 536 | 93 673 | 49 |
| 12 | 70 159 | 76 493 | 23 507 | 93 665 | 48 |
| 13 | 70 180 | 76 522 | 23 478 | 93 658 | 47 |
| 14 | 70 202 | 76 551 | 23 449 | 93 650 | 46 |
| 15 | 70 224 | 76 580 | 23 420 | 93 643 | 45 |
| 16 | 70 245 | 76 609 | 23 391 | 93 636 | 44 |
| 17 | 70 267 | 76 639 | 23 361 | 93 628 | 43 |
| 18 | 70 288 | 76 668 | 23 332 | 93 621 | 42 |
| 19 | 70 310 | 76 697 | 23 303 | 93 614 | 41 |
| 20 | 70 332 | 76 725 | 23 275 | 93 606 | 40 |
| 21 | 70 353 | 76 754 | 23 246 | 93 599 | 39 |
| 22 | 70 375 | 76 783 | 23 217 | 93 591 | 38 |
| 23 | 70 396 | 76 812 | 23 188 | 93 584 | 37 |
| 24 | 70 418 | 76 841 | 23 159 | 93 577 | 36 |
| 25 | 70 439 | 76 870 | 23 130 | 93 569 | 35 |
| 26 | 70 461 | 76 899 | 23 101 | 93 562 | 34 |
| 27 | 70 482 | 76 928 | 23 072 | 93 554 | 33 |
| 28 | 70 504 | 76 957 | 23 043 | 93 547 | 32 |
| 29 | 70 525 | 76 986 | 23 014 | 93 539 | 31 |
| 30 | 70 547 | 77 015 | 22 985 | 93 532 | 30 |
| 31 | 70 568 | 77 044 | 22 956 | 93 525 | 29 |
| 32 | 70 590 | 77 073 | 22 927 | 93 517 | 28 |
| 33 | 70 611 | 77 101 | 22 899 | 93 510 | 27 |
| 34 | 70 633 | 77 130 | 22 870 | 93 502 | 26 |
| 35 | 70 654 | 77 159 | 22 841 | 93 495 | 25 |
| 36 | 70 675 | 77 188 | 22 812 | 93 487 | 24 |
| 37 | 70 697 | 77 217 | 22 783 | 93 480 | 23 |
| 38 | 70 718 | 77 246 | 22 754 | 93 472 | 22 |
| 39 | 70 739 | 77 274 | 22 726 | 93 465 | 21 |
| 40 | 70 761 | 77 303 | 22 697 | 93 457 | 20 |
| 41 | 70 782 | 77 332 | 22 668 | 93 450 | 19 |
| 42 | 70 803 | 77 361 | 22 639 | 93 442 | 18 |
| 43 | 70 824 | 77 390 | 22 610 | 93 435 | 17 |
| 44 | 70 846 | 77 418 | 22 582 | 93 427 | 16 |
| 45 | 70 867 | 77 447 | 22 553 | 93 420 | 15 |
| 46 | 70 888 | 77 476 | 22 524 | 93 412 | 14 |
| 47 | 70 909 | 77 505 | 22 495 | 93 405 | 13 |
| 48 | 70 931 | 77 533 | 22 467 | 93 397 | 12 |
| 49 | 70 952 | 77 562 | 22 438 | 93 390 | 11 |
| 50 | 70 973 | 77 591 | 22 409 | 93 382 | 10 |
| 51 | 70 994 | 77 619 | 22 381 | 93 375 | 9 |
| 52 | 71 015 | 77 648 | 22 352 | 93 367 | 8 |
| 53 | 71 036 | 77 677 | 22 323 | 93 360 | 7 |
| 54 | 71 058 | 77 706 | 22 294 | 93 352 | 6 |
| 55 | 71 079 | 77 734 | 22 266 | 93 344 | 5 |
| 56 | 71 100 | 77 763 | 22 237 | 93 337 | 4 |
| 57 | 71 121 | 77 791 | 22 209 | 93 329 | 3 |
| 58 | 71 142 | 77 820 | 22 180 | 93 322 | 2 |
| 59 | 71 163 | 77 849 | 22 151 | 93 314 | 1 |
| 60 | 71 184 | 77 877 | 22 123 | 93 307 | 0 |
| ′ | log cos 9 | log cot 9 | log tan 10 | log sin 9 | ′ |

**59°**

| ′ | log sin -9- | log tan -9- | log cot -10- | log cos -9- | ′ |
|---|---|---|---|---|---|
| 0 | 71 184 | 77 877 | 22 123 | 93 307 | 60 |
| 1 | 71 205 | 77 906 | 22 094 | 93 299 | 59 |
| 2 | 71 226 | 77 935 | 22 065 | 93 291 | 58 |
| 3 | 71 247 | 77 963 | 22 037 | 93 284 | 57 |
| 4 | 71 268 | 77 992 | 22 008 | 93 276 | 56 |
| 5 | 71 289 | 78 020 | 21 980 | 93 269 | 55 |
| 6 | 71 310 | 78 049 | 21 951 | 93 261 | 54 |
| 7 | 71 331 | 78 077 | 21 923 | 93 253 | 53 |
| 8 | 71 352 | 78 106 | 21 894 | 93 246 | 52 |
| 9 | 71 373 | 78 135 | 21 865 | 93 238 | 51 |
| 10 | 71 393 | 78 163 | 21 837 | 93 230 | 50 |
| 11 | 71 414 | 78 192 | 21 808 | 93 223 | 49 |
| 12 | 71 435 | 78 220 | 21 780 | 93 215 | 48 |
| 13 | 71 456 | 78 249 | 21 751 | 93 207 | 47 |
| 14 | 71 477 | 78 277 | 21 723 | 93 200 | 46 |
| 15 | 71 498 | 78 306 | 21 694 | 93 192 | 45 |
| 16 | 71 519 | 78 334 | 21 666 | 93 184 | 44 |
| 17 | 71 539 | 78 363 | 21 637 | 93 177 | 43 |
| 18 | 71 560 | 78 391 | 21 609 | 93 169 | 42 |
| 19 | 71 581 | 78 419 | 21 581 | 93 161 | 41 |
| 20 | 71 602 | 78 448 | 21 552 | 93 154 | 40 |
| 21 | 71 622 | 78 476 | 21 524 | 93 146 | 39 |
| 22 | 71 643 | 78 505 | 21 495 | 93 138 | 38 |
| 23 | 71 664 | 78 533 | 21 467 | 93 131 | 37 |
| 24 | 71 685 | 78 562 | 21 438 | 93 123 | 36 |
| 25 | 71 705 | 78 590 | 21 410 | 93 115 | 35 |
| 26 | 71 726 | 78 618 | 21 382 | 93 108 | 34 |
| 27 | 71 747 | 78 647 | 21 353 | 93 100 | 33 |
| 28 | 71 767 | 78 675 | 21 325 | 93 092 | 32 |
| 29 | 71 788 | 78 704 | 21 296 | 93 084 | 31 |
| 30 | 71 809 | 78 732 | 21 268 | 93 077 | 30 |
| 31 | 71 829 | 78 760 | 21 240 | 93 069 | 29 |
| 32 | 71 850 | 78 789 | 21 211 | 93 061 | 28 |
| 33 | 71 870 | 78 817 | 21 183 | 93 053 | 27 |
| 34 | 71 891 | 78 845 | 21 155 | 93 046 | 26 |
| 35 | 71 911 | 78 874 | 21 126 | 93 038 | 25 |
| 36 | 71 932 | 78 902 | 21 098 | 93 030 | 24 |
| 37 | 71 952 | 78 930 | 21 070 | 93 022 | 23 |
| 38 | 71 973 | 78 959 | 21 041 | 93 014 | 22 |
| 39 | 71 994 | 78 987 | 21 013 | 93 007 | 21 |
| 40 | 72 014 | 79 015 | 20 985 | 92 999 | 20 |
| 41 | 72 034 | 79 043 | 20 957 | 92 991 | 19 |
| 42 | 72 055 | 79 072 | 20 928 | 92 983 | 18 |
| 43 | 72 075 | 79 100 | 20 900 | 92 976 | 17 |
| 44 | 72 096 | 79 128 | 20 872 | 92 968 | 16 |
| 45 | 72 116 | 79 156 | 20 844 | 92 960 | 15 |
| 46 | 72 137 | 79 185 | 20 815 | 92 952 | 14 |
| 47 | 72 157 | 79 213 | 20 787 | 92 944 | 13 |
| 48 | 72 177 | 79 241 | 20 759 | 92 936 | 12 |
| 49 | 72 198 | 79 269 | 20 731 | 92 929 | 11 |
| 50 | 72 218 | 79 297 | 20 703 | 92 921 | 10 |
| 51 | 72 238 | 79 326 | 20 674 | 92 913 | 9 |
| 52 | 72 259 | 79 354 | 20 646 | 92 905 | 8 |
| 53 | 72 279 | 79 382 | 20 618 | 92 897 | 7 |
| 54 | 72 299 | 79 410 | 20 590 | 92 889 | 6 |
| 55 | 72 320 | 79 438 | 20 562 | 92 881 | 5 |
| 56 | 72 340 | 79 466 | 20 534 | 92 874 | 4 |
| 57 | 72 360 | 79 495 | 20 505 | 92 866 | 3 |
| 58 | 72 381 | 79 523 | 20 477 | 92 858 | 2 |
| 59 | 72 401 | 79 551 | 20 449 | 92 850 | 1 |
| 60 | 72 421 | 79 579 | 20 421 | 92 842 | 0 |
| ′ | log cos -9- | log cot -9- | log tan -10- | log sin -9- | ′ |

| ′ | log sin -9- | log tan -9- | log cot -10- | log cos -9- | ′ |
|---|---|---|---|---|---|
| 0 | 72 421 | 79 579 | 20 421 | 92 842 | 60 |
| 1 | 72 441 | 79 607 | 20 393 | 92 834 | 59 |
| 2 | 72 461 | 79 635 | 20 365 | 92 826 | 58 |
| 3 | 72 482 | 79 663 | 20 337 | 92 818 | 57 |
| 4 | 72 502 | 79 691 | 20 309 | 92 810 | 56 |
| 5 | 72 522 | 79 719 | 20 281 | 92 803 | 55 |
| 6 | 72 542 | 79 747 | 20 253 | 92 795 | 54 |
| 7 | 72 562 | 79 776 | 20 224 | 92 787 | 53 |
| 8 | 72 582 | 79 804 | 20 196 | 92 779 | 52 |
| 9 | 72 602 | 79 832 | 20 168 | 92 771 | 51 |
| 10 | 72 622 | 79 860 | 20 140 | 92 763 | 50 |
| 11 | 72 643 | 79 888 | 20 112 | 92 755 | 49 |
| 12 | 72 663 | 79 916 | 20 084 | 92 747 | 48 |
| 13 | 72 683 | 79 944 | 20 056 | 92 739 | 47 |
| 14 | 72 703 | 79 972 | 20 028 | 92 731 | 46 |
| 15 | 72 723 | 80 000 | 20 000 | 92 723 | 45 |
| 16 | 72 743 | 80 028 | 19 972 | 92 715 | 44 |
| 17 | 72 763 | 80 056 | 19 944 | 92 707 | 43 |
| 18 | 72 783 | 80 084 | 19 916 | 92 699 | 42 |
| 19 | 72 803 | 80 112 | 19 888 | 92 691 | 41 |
| 20 | 72 823 | 80 140 | 19 860 | 92 683 | 40 |
| 21 | 72 843 | 80 168 | 19 832 | 92 675 | 39 |
| 22 | 72 863 | 80 195 | 19 805 | 92 667 | 38 |
| 23 | 72 883 | 80 223 | 19 777 | 92 659 | 37 |
| 24 | 72 902 | 80 251 | 19 749 | 92 651 | 36 |
| 25 | 72 922 | 80 279 | 19 721 | 92 643 | 35 |
| 26 | 72 942 | 80 307 | 19 693 | 92 635 | 34 |
| 27 | 72 962 | 80 335 | 19 665 | 92 627 | 33 |
| 28 | 72 982 | 80 363 | 19 637 | 92 619 | 32 |
| 29 | 73 002 | 80 391 | 19 609 | 92 611 | 31 |
| 30 | 73 022 | 80 419 | 19 581 | 92 603 | 30 |
| 31 | 73 041 | 80 447 | 19 553 | 92 595 | 29 |
| 32 | 73 061 | 80 474 | 19 526 | 92 587 | 28 |
| 33 | 73 081 | 80 502 | 19 498 | 92 579 | 27 |
| 34 | 73 101 | 80 530 | 19 470 | 92 571 | 26 |
| 35 | 73 121 | 80 558 | 19 442 | 92 563 | 25 |
| 36 | 73 140 | 80 586 | 19 414 | 92 555 | 24 |
| 37 | 73 160 | 80 614 | 19 386 | 92 546 | 23 |
| 38 | 73 180 | 80 642 | 19 358 | 92 538 | 22 |
| 39 | 73 200 | 80 669 | 19 331 | 92 530 | 21 |
| 40 | 73 219 | 80 697 | 19 303 | 92 522 | 20 |
| 41 | 73 239 | 80 725 | 19 275 | 92 514 | 19 |
| 42 | 73 259 | 80 753 | 19 247 | 92 506 | 18 |
| 43 | 73 278 | 80 781 | 19 219 | 92 498 | 17 |
| 44 | 73 298 | 80 808 | 19 192 | 92 490 | 16 |
| 45 | 73 318 | 80 836 | 19 164 | 92 482 | 15 |
| 46 | 73 337 | 80 864 | 19 136 | 92 473 | 14 |
| 47 | 73 357 | 80 892 | 19 108 | 92 465 | 13 |
| 48 | 73 377 | 80 919 | 19 081 | 92 457 | 12 |
| 49 | 73 396 | 80 947 | 19 053 | 92 449 | 11 |
| 50 | 73 416 | 80 975 | 19 025 | 92 441 | 10 |
| 51 | 73 435 | 81 003 | 18 997 | 92 433 | 9 |
| 52 | 73 455 | 81 030 | 18 970 | 92 425 | 8 |
| 53 | 73 474 | 81 058 | 18 942 | 92 416 | 7 |
| 54 | 73 494 | 81 086 | 18 914 | 92 408 | 6 |
| 55 | 73 513 | 81 113 | 18 887 | 92 400 | 5 |
| 56 | 73 533 | 81 141 | 18 859 | 92 392 | 4 |
| 57 | 73 552 | 81 169 | 18 831 | 92 384 | 3 |
| 58 | 73 572 | 81 196 | 18 804 | 92 376 | 2 |
| 59 | 73 591 | 81 224 | 18 776 | 92 367 | 1 |
| 60 | 73 611 | 81 252 | 18 748 | 92 359 | 0 |
| ′ | log cos -9- | log cot -9- | log tan -10- | log sin -9- | ′ |

| ′ | log sin 9 | log tan 9 | log cot 10 | log cos 9 | ′ |
|---|---|---|---|---|---|
| 0 | 73 611 | 81 252 | 18 748 | 92 359 | 60 |
| 1 | 73 630 | 81 279 | 18 721 | 92 351 | 59 |
| 2 | 73 650 | 81 307· | 18 693 | 92 343 | 58 |
| 3 | 73 669 | 81 335 | 18 665 | 92 335 | 57 |
| 4 | 73 689 | 81 362 | 18 638 | 92 326 | 56 |
| 5 | 73 708 | 81 390 | 18 610 | 92 318 | 55 |
| 6 | 73 727 | 81 418 | 18 582 | 92 310 | 54 |
| 7 | 73 747 | 81 445 | 18 555 | 92 302 | 53 |
| 8 | 73 766 | 81 473 | 18 527 | 92 293 | 52 |
| 9 | 73 785 | 81 500 | 18 500 | 92 285 | 51 |
| 10 | 73 805 | 81 528 | 18 472 | 92 277 | 50 |
| 11 | 73 824 | 81 556 | 18 444 | 92 269 | 49 |
| 12 | 73 843 | 81 583 | 18 417 | 92 260 | 48 |
| 13 | 73 863 | 81 611 | 18 389 | 92 252 | 47 |
| 14 | 73 882 | 81 638 | 18 362 | 92 244 | 46 |
| 15 | 73 901 | 81 666 | 18 334 | 92 235 | 45 |
| 16 | 73 921 | 81 693 | 18 307 | 92 227 | 44 |
| 17 | 73 940 | 81 721 | 18 279 | 92 219 | 43 |
| 18 | 73 959 | 81 748 | 18 252 | 92 211 | 42 |
| 19 | 73 978 | 81 776 | 18 224 | 92 202 | 41 |
| 20 | 73 997 | 81 803 | 18 197 | 92 194 | 40 |
| 21 | 74 017 | 81 831 | 18 169 | 92 186 | 39 |
| 22 | 74 036 | 81 858 | 18 142 | 92 177 | 38 |
| 23 | 74 055 | 81 886 | 18 114 | 92 169 | 37 |
| 24 | 74 074 | 81 913 | 18 087 | 92 161 | 36 |
| 25 | 74 093 | 81 941 | 18 059 | 92 152 | 35 |
| 26 | 74 113 | 81 968 | 18 032 | 92 144 | 34 |
| 27 | 74 132 | 81 996 | 18 004 | 92 136 | 33 |
| 28 | 74 151 | 82 023 | 17 977 | 92 127 | 32 |
| 29 | 74 170 | 82 051 | 17 949 | 92 119 | 31 |
| 30 | 74 189 | 82 078 | 17 922 | 92 111 | 30 |
| 31 | 74 208 | 82 106 | 17 894 | 92 102 | 29 |
| 32 | 74 227 | 82 133 | 17 867 | 92 094 | 28 |
| 33 | 74 246 | 82 161 | 17 839 | 92 086 | 27 |
| 34 | 74 265 | 82 188 | 17 812 | 92 077 | 26 |
| 35 | 74 284 | 82 215 | 17 785 | 92 069 | 25 |
| 36 | 74 303 | 82 243 | 17 757 | 92 060 | 24 |
| 37 | 74 322 | 82 270 | 17 730 | 92 052 | 23 |
| 38 | 74 341 | 82 298 | 17 702 | 92 044 | 22 |
| 39 | 74 360 | 82 325 | 17 675 | 92 035 | 21 |
| 40 | 74 379 | 82 352 | 17 648 | 92 027 | 20 |
| 41 | 74 398 | 82 380 | 17 620 | 92 018 | 19 |
| 42 | 74 417 | 82 407 | 17 593 | 92 010 | 18 |
| 43 | 74 436 | 82 435 | 17 565 | 92 002 | 17 |
| 44 | 74 455 | 82 462 | 17 538 | 91 993 | 16 |
| 45 | 74 474 | 82 489 | 17 511 | 91 985 | 15 |
| 46 | 74 493 | 82 517 | 17 483 | 91 976 | 14 |
| 47 | 74 512 | 82 544 | 17 456 | 91 968 | 13 |
| 48 | 74 531 | 82 571 | 17 429 | 91 959 | 12 |
| 49 | 74 549 | 82 599 | 17 401 | 91 951 | 11 |
| 50 | 74 568 | 82 626 | 17 374 | 91 942 | 10 |
| 51 | 74 587 | 82 653 | 17 347 | 91 934 | 9 |
| 52 | 74 606 | 82 681 | 17 319 | 91 925 | 8 |
| 53 | 74 625 | 82 708 | 17 292 | 91 917 | 7 |
| 54 | 74 644 | 82 735 | 17 265 | 91 908 | 6 |
| 55 | 74 662 | 82 762 | 17 238 | 91 900 | 5 |
| 56 | 74 681 | 82 790 | 17 210 | 91 891 | 4 |
| 57 | 74 700 | 82 817 | 17 183 | 91 883 | 3 |
| 58 | 74 719 | 82 844 | 17 156 | 91 874 | 2 |
| 59 | 74 737 | 82 871 | 17 129 | 91 866 | 1 |
| 60 | 74 756 | 82 899 | 17 101 | 91 857 | 0 |
| ′ | log cos 9 | log cot 9 | log tan 10 | log sin 9 | ′ |

| ′ | log sin 9 | log tan 9 | log cot 10 | log cos 9 | ′ |
|---|---|---|---|---|---|
| 0 | 74 756 | 82 899 | 17 101 | 91 857 | 60 |
| 1 | 74 775 | 82 926 | 17 074 | 91 849 | 59 |
| 2 | 74 794 | 82 953 | 17 047 | 91 840 | 58 |
| 3 | 74 812 | 82 980 | 17 020 | 91 832 | 57 |
| 4 | 74 831 | 83 008 | 16 992 | 91 823 | 56 |
| 5 | 74 850 | 83 035 | 16 965 | 91 815 | 55 |
| 6 | 74 868 | 83 062 | 16 938 | 91 806 | 54 |
| 7 | 74 887 | 83 089 | 16 911 | 91 798 | 53 |
| 8 | 74 906 | 83 117 | 16 883 | 91 789 | 52 |
| 9 | 74 924 | 83 144 | 16 856 | 91 781 | 51 |
| 10 | 74 943 | 83 171 | 16 829 | 91 772 | 50 |
| 11 | 74 961 | 83 198 | 16 802 | 91 763 | 49 |
| 12 | 74 980 | 83 225 | 16 775 | 91 755 | 48 |
| 13 | 74 999 | 83 252 | 16 748 | 91 746 | 47 |
| 14 | 75 017 | 83 280 | 16 720 | 91 738 | 46 |
| 15 | 75 036 | 83 307 | 16 693 | 91 729 | 45 |
| 16 | 75 054 | 83 334 | 16 666 | 91 721 | 44 |
| 17 | 75 073 | 83 361 | 16 639 | 91 712 | 43 |
| 18 | 75 091 | 83 388 | 16 612 | 91 703 | 42 |
| 19 | 75 110 | 83 415 | 16 585 | 91 695 | 41 |
| 20 | 75 128 | 83 442 | 16 558 | 91 686 | 40 |
| 21 | 75 147 | 83 470 | 16 530 | 91 677 | 39 |
| 22 | 75 165 | 83 497 | 16 503 | 91 669 | 38 |
| 23 | 75 184 | 83 524 | 16 476 | 91 660 | 37 |
| 24 | 75 202 | 83 551 | 16 449 | 91 651 | 36 |
| 25 | 75 221 | 83 578 | 16 422 | 91 643 | 35 |
| 26 | 75 239 | 83 605 | 16 395 | 91 634 | 34 |
| 27 | 75 258 | 83 632 | 16 368 | 91 625 | 33 |
| 28 | 75 276 | 83 659 | 16 341 | 91 617 | 32 |
| 29 | 75 294 | 83 686 | 16 314 | 91 608 | 31 |
| 30 | 75 313 | 83 713 | 16 287 | 91 599 | 30 |
| 31 | 75 331 | 83 740 | 16 260 | 91 591 | 29 |
| 32 | 75 350 | 83 768 | 16 232 | 91 582 | 28 |
| 33 | 75 368 | 83 795 | 16 205 | 91 573 | 27 |
| 34 | 75 386 | 83 822 | 16 178 | 91 565 | 26 |
| 35 | 75 405 | 83 849 | 16 151 | 91 556 | 25 |
| 36 | 75 423 | 83 876 | 16 124 | 91 547 | 24 |
| 37 | 75 441 | 83 903 | 16 097 | 91 538 | 23 |
| 38 | 75 459 | 83 930 | 16 070 | 91 530 | 22 |
| 39 | 75 478 | 83 957 | 16 043 | 91 521 | 21 |
| 40 | 75 496 | 83 984 | 16 016 | 91 512 | 20 |
| 41 | 75 514 | 84 011 | 15 989 | 91 504 | 19 |
| 42 | 75 533 | 84 038 | 15 962 | 91 495 | 18 |
| 43 | 75 551 | 84 065 | 15 935 | 91 486 | 17 |
| 44 | 75 569 | 84 092 | 15 908 | 91 477 | 16 |
| 45 | 75 587 | 84 119 | 15 881 | 91 469 | 15 |
| 46 | 75 605 | 84 146 | 15 854 | 91 460 | 14 |
| 47 | 75 624 | 84 173 | 15 827 | 91 451 | 13 |
| 48 | 75 642 | 84 200 | 15 800 | 91 442 | 12 |
| 49 | 75 660 | 84 227 | 15 773 | 91 433 | 11 |
| 50 | 75 678 | 84 254 | 15 746 | 91 425 | 10 |
| 51 | 75 696 | 84 280 | 15 720 | 91 416 | 9 |
| 52 | 75 714 | 84 307 | 15 693 | 91 407 | 8 |
| 53 | 75 733 | 84 334 | 15 666 | 91 398 | 7 |
| 54 | 75 751 | 84 361 | 15 639 | 91 389 | 6 |
| 55 | 75 769 | 84 388 | 15 612 | 91 381 | 5 |
| 56 | 75 787 | 84 415 | 15 585 | 91 372 | 4 |
| 57 | 75 805 | 84 442 | 15 558 | 91 363 | 3 |
| 58 | 75 823 | 84 469 | 15 531 | 91 354 | 2 |
| 59 | 75 841 | 84 496 | 15 504 | 91 345 | 1 |
| 60 | 75 859 | 84 523 | 15 477 | 91 336 | 0 |
| ′ | log cos 9 | log cot 9 | log tan 10 | log sin 9 | ′ |

| ′ | log sin | log tan | log cot | log cos | ′ |
|---|---|---|---|---|---|
|  | –9– | –9– | –10– | –9– |  |
| 0 | 75 859 | 84 523 | 15 477 | 91 336 | 60 |
| 1 | 75 877 | 84 550 | 15 450 | 91 328 | 59 |
| 2 | 75 895 | 84 576 | 15 424 | 91 319 | 58 |
| 3 | 75 913 | 84 603 | 15 397 | 91 310 | 57 |
| 4 | 75 931 | 84 630 | 15 370 | 91 301 | 56 |
| 5 | 75 949 | 84 657 | 15 343 | 91 292 | 55 |
| 6 | 75 967 | 84 684 | 15 316 | 91 283 | 54 |
| 7 | 75 985 | 84 711 | 15 289 | 91 274 | 53 |
| 8 | 76 003 | 84 738 | 15 262 | 91 266 | 52 |
| 9 | 76 021 | 84 764 | 15 236 | 91 257 | 51 |
| 10 | 76 039 | 84 791 | 15 209 | 91 248 | 50 |
| 11 | 76 057 | 84 818 | 15 182 | 91 239 | 49 |
| 12 | 76 075 | 84 845 | 15 155 | 91 230 | 48 |
| 13 | 76 093 | 84 872 | 15 128 | 91 221 | 47 |
| 14 | 76 111 | 84 899 | 15 101 | 91 212 | 46 |
| 15 | 76 129 | 84 925 | 15 075 | 91 203 | 45 |
| 16 | 76 146 | 84 952 | 15 048 | 91 194 | 44 |
| 17 | 76 164 | 84 979 | 15 021 | 91 185 | 43 |
| 18 | 76 182 | 85 006 | 14 994 | 91 176 | 42 |
| 19 | 76 200 | 85 033 | 14 967 | 91 167 | 41 |
| 20 | 76 218 | 85 059 | 14 941 | 91 158 | 40 |
| 21 | 76 236 | 85 086 | 14 914 | 91 149 | 39 |
| 22 | 76 253 | 85 113 | 14 887 | 91 141 | 38 |
| 23 | 76 271 | 85 140 | 14 860 | 91 132 | 37 |
| 24 | 76 289 | 85 166 | 14 834 | 91 123 | 36 |
| 25 | 76 307 | 85 193 | 14 807 | 91 114 | 35 |
| 26 | 76 324 | 85 220 | 14 780 | 91 105 | 34 |
| 27 | 76 342 | 85 247 | 14 753 | 91 096 | 33 |
| 28 | 76 360 | 85 273 | 14 727 | 91 087 | 32 |
| 29 | 76 378 | 85 300 | 14 700 | 91 078 | 31 |
| 30 | 76 395 | 85 327 | 14 673 | 91 069 | 30 |
| 31 | 76 413 | 85 354 | 14 646 | 91 060 | 29 |
| 32 | 76 431 | 85 380 | 14 620 | 91 051 | 28 |
| 33 | 76 448 | 85 407 | 14 593 | 91 042 | 27 |
| 34 | 76 466 | 85 434 | 14 566 | 91 033 | 26 |
| 35 | 76 484 | 85 460 | 14 540 | 91 023 | 25 |
| 36 | 76 501 | 85 487 | 14 513 | 91 014 | 24 |
| 37 | 76 519 | 85 514 | 14 486 | 91 005 | 23 |
| 38 | 76 537 | 85 540 | 14 460 | 90 996 | 22 |
| 39 | 76 554 | 85 567 | 14 433 | 90 987 | 21 |
| 40 | 76 572 | 85 594 | 14 406 | 90 978 | 20 |
| 41 | 76 590 | 85 620 | 14 380 | 90 969 | 19 |
| 42 | 76 607 | 85 647 | 14 353 | 90 960 | 18 |
| 43 | 76 625 | 85 674 | 14 326 | 90 951 | 17 |
| 44 | 76 642 | 85 700 | 14 300 | 90 942 | 16 |
| 45 | 76 660 | 85 727 | 14 273 | 90 933 | 15 |
| 46 | 76 677 | 85 754 | 14 246 | 90 924 | 14 |
| 47 | 76 695 | 85 780 | 14 220 | 90 915 | 13 |
| 48 | 76 712 | 85 807 | 14 193 | 90 906 | 12 |
| 49 | 76 730 | 85 834 | 14 166 | 90 896 | 11 |
| 50 | 76 747 | 85 860 | 14 140 | 90 887 | 10 |
| 51 | 76 765 | 85 887 | 14 113 | 90 878 | 9 |
| 52 | 76 782 | 85 913 | 14 087 | 90 869 | 8 |
| 53 | 76 800 | 85 940 | 14 060 | 90 860 | 7 |
| 54 | 76 817 | 85 967 | 14 033 | 90 851 | 6 |
| 55 | 76 835 | 85 993 | 14 007 | 90 842 | 5 |
| 56 | 76 852 | 86 020 | 13 980 | 90 832 | 4 |
| 57 | 76 870 | 86 046 | 13 954 | 90 823 | 3 |
| 58 | 76 887 | 86 073 | 13 927 | 90 814 | 2 |
| 59 | 76 904 | 86 100 | 13 900 | 90 805 | 1 |
| 60 | 76 922 | 86 126 | 13 874 | 90 796 | 0 |
|  | –9– | –9– | –10– | –9– |  |
| ′ | log cos | log cot | log tan | log sin | ′ |

| ′ | log sin | log tan | log cot | log cos | ′ |
|---|---|---|---|---|---|
|  | –9– | –9– | –10– | –9– |  |
| 0 | 76 922 | 86 126 | 13 874 | 90 796 | 60 |
| 1 | 76 939 | 86 153 | 13 847 | 90 787 | 59 |
| 2 | 76 957 | 86 179 | 13 821 | 90 777 | 58 |
| 3 | 76 974 | 86 206 | 13 794 | 90 768 | 57 |
| 4 | 76 991 | 86 232 | 13 768 | 90 759 | 56 |
| 5 | 77 009 | 86 259 | 13 741 | 90 750 | 55 |
| 6 | 77 026 | 86 285 | 13 715 | 90 741 | 54 |
| 7 | 77 043 | 86 312 | 13 688 | 90 731 | 53 |
| 8 | 77 061 | 86 338 | 13 662 | 90 722 | 52 |
| 9 | 77 078 | 86 365 | 13 635 | 90 713 | 51 |
| 10 | 77 095 | 86 392 | 13 608 | 90 704 | 50 |
| 11 | 77 112 | 86 418 | 13 582 | 90 694 | 49 |
| 12 | 77 130 | 86 445 | 13 555 | 90 685 | 48 |
| 13 | 77 147 | 86 471 | 13 529 | 90 676 | 47 |
| 14 | 77 164 | 86 498 | 13 502 | 90 667 | 46 |
| 15 | 77 181 | 86 524 | 13 476 | 90 657 | 45 |
| 16 | 77 199 | 86 551 | 13 449 | 90 648 | 44 |
| 17 | 77 216 | 86 577 | 13 423 | 90 639 | 43 |
| 18 | 77 233 | 86 603 | 13 397 | 90 630 | 42 |
| 19 | 77 250 | 86 630 | 13 370 | 90 620 | 41 |
| 20 | 77 268 | 86 656 | 13 344 | 90 611 | 40 |
| 21 | 77 285 | 86 683 | 13 317 | 90 602 | 39 |
| 22 | 77 302 | 86 709 | 13 291 | 90 592 | 38 |
| 23 | 77 319 | 86 736 | 13 264 | 90 583 | 37 |
| 24 | 77 336 | 86 762 | 13 238 | 90 574 | 36 |
| 25 | 77 353 | 86 789 | 13 211 | 90 565 | 35 |
| 26 | 77 370 | 86 815 | 13 185 | 90 555 | 34 |
| 27 | 77 387 | 86 842 | 13 158 | 90 546 | 33 |
| 28 | 77 405 | 86 868 | 13 132 | 90 537 | 32 |
| 29 | 77 422 | 86 894 | 13 106 | 90 527 | 31 |
| 30 | 77 439 | 86 921 | 13 079 | 90 518 | 30 |
| 31 | 77 456 | 86 947 | 13 053 | 90 509 | 29 |
| 32 | 77 473 | 86 974 | 13 026 | 90 499 | 28 |
| 33 | 77 490 | 87 000 | 13 000 | 90 490 | 27 |
| 34 | 77 507 | 87 027 | 12 973 | 90 480 | 26 |
| 35 | 77 524 | 87 053 | 12 947 | 90 471 | 25 |
| 36 | 77 541 | 87 079 | 12 921 | 90 462 | 24 |
| 37 | 77 558 | 87 106 | 12 894 | 90 452 | 23 |
| 38 | 77 575 | 87 132 | 12 868 | 90 443 | 22 |
| 39 | 77 592 | 87 158 | 12 842 | 90 434 | 21 |
| 40 | 77 609 | 87 185 | 12 815 | 90 424 | 20 |
| 41 | 77 626 | 87 211 | 12 789 | 90 415 | 19 |
| 42 | 77 643 | 87 238 | 12 762 | 90 405 | 18 |
| 43 | 77 660 | 87 264 | 12 736 | 90 396 | 17 |
| 44 | 77 677 | 87 290 | 12 710 | 90 386 | 16 |
| 45 | 77 694 | 87 317 | 12 683 | 90 377 | 15 |
| 46 | 77 711 | 87 343 | 12 657 | 90 368 | 14 |
| 47 | 77 728 | 87 369 | 12 631 | 90 358 | 13 |
| 48 | 77 744 | 87 396 | 12 604 | 90 349 | 12 |
| 49 | 77 761 | 87 422 | 12 578 | 90 339 | 11 |
| 50 | 77 778 | 87 448 | 12 552 | 90 330 | 10 |
| 51 | 77 795 | 87 475 | 12 525 | 90 320 | 9 |
| 52 | 77 812 | 87 501 | 12 499 | 90 311 | 8 |
| 53 | 77 829 | 87 527 | 12 473 | 90 301 | 7 |
| 54 | 77 846 | 87 554 | 12 446 | 90 292 | 6 |
| 55 | 77 862 | 87 580 | 12 420 | 90 282 | 5 |
| 56 | 77 879 | 87 606 | 12 394 | 90 273 | 4 |
| 57 | 77 896 | 87 633 | 12 367 | 90 263 | 3 |
| 58 | 77 913 | 87 659 | 12 341 | 90 254 | 2 |
| 59 | 77 930 | 87 685 | 12 315 | 90 244 | 1 |
| 60 | 77 946 | 87 711 | 12 289 | 90 235 | 0 |
|  | –9– | –9– | –10– | –9– |  |
| ′ | log cos | log cot | log tan | log sin | ′ |

**37°**

| ′ | log sin 9 | log tan 9 | log cot 10 | log cos 9 | ′ |
|---|---|---|---|---|---|
| 0 | 77 946 | 87 711 | 12 289 | 90 235 | 60 |
| 1 | 77 963 | 87 738 | 12 262 | 90 225 | 59 |
| 2 | 77 980 | 87 764 | 12 236 | 90 216 | 58 |
| 3 | 77 997 | 87 790 | 12 210 | 90 206 | 57 |
| 4 | 78 013 | 87 817 | 12 183 | 90 197 | 56 |
| 5 | 78 030 | 87 843 | 12 157 | 90 187 | 55 |
| 6 | 78 047 | 87 869 | 12 131 | 90 178 | 54 |
| 7 | 78 063 | 87 895 | 12 105 | 90 168 | 53 |
| 8 | 78 080 | 87 922 | 12 078 | 90 159 | 52 |
| 9 | 78 097 | 87 948 | 12 052 | 90 149 | 51 |
| 10 | 78 113 | 87 974 | 12 026 | 90 139 | 50 |
| 11 | 78 130 | 88 000 | 12 000 | 90 130 | 49 |
| 12 | 78 147 | 88 027 | 11 973 | 90 120 | 48 |
| 13 | 78 163 | 88 053 | 11 947 | 90 111 | 47 |
| 14 | 78 180 | 88 079 | 11 921 | 90 101 | 46 |
| 15 | 78 197 | 88 105 | 11 895 | 90 091 | 45 |
| 16 | 78 213 | 88 131 | 11 869 | 90 082 | 44 |
| 17 | 78 230 | 88 158 | 11 842 | 90 072 | 43 |
| 18 | 78 246 | 88 184 | 11 816 | 90 063 | 42 |
| 19 | 78 263 | 88 210 | 11 790 | 90 053 | 41 |
| 20 | 78 280 | 88 236 | 11 764 | 90 043 | 40 |
| 21 | 78 296 | 88 262 | 11 738 | 90 034 | 39 |
| 22 | 78 313 | 88 289 | 11 711 | 90 024 | 38 |
| 23 | 78 329 | 88 315 | 11 685 | 90 014 | 37 |
| 24 | 78 346 | 88 341 | 11 659 | 90 005 | 36 |
| 25 | 78 362 | 88 367 | 11 633 | 89 995 | 35 |
| 26 | 78 379 | 88 393 | 11 607 | 89 985 | 34 |
| 27 | 78 395 | 88 420 | 11 580 | 89 976 | 33 |
| 28 | 78 412 | 88 446 | 11 554 | 89 966 | 32 |
| 29 | 78 428 | 88 472 | 11 528 | 89 956 | 31 |
| 30 | 78 445 | 88 498 | 11 502 | 89 947 | 30 |
| 31 | 78 461 | 88 524 | 11 476 | 89 937 | 29 |
| 32 | 78 478 | 88 550 | 11 450 | 89 927 | 28 |
| 33 | 78 494 | 88 577 | 11 423 | 89 918 | 27 |
| 34 | 78 510 | 88 603 | 11 397 | 89 908 | 26 |
| 35 | 78 527 | 88 629 | 11 371 | 89 898 | 25 |
| 36 | 78 543 | 88 655 | 11 345 | 89 888 | 24 |
| 37 | 78 560 | 88 681 | 11 319 | 89 879 | 23 |
| 38 | 78 576 | 88 707 | 11 293 | 89 869 | 22 |
| 39 | 78 592 | 88 733 | 11 267 | 89 859 | 21 |
| 40 | 78 609 | 88 759 | 11 241 | 89 849 | 20 |
| 41 | 78 625 | 88 786 | 11 214 | 89 840 | 19 |
| 42 | 78 642 | 88 812 | 11 188 | 89 830 | 18 |
| 43 | 78 658 | 88 838 | 11 162 | 89 820 | 17 |
| 44 | 78 674 | 88 864 | 11 136 | 89 810 | 16 |
| 45 | 78 691 | 88 890 | 11 110 | 89 801 | 15 |
| 46 | 78 707 | 88 916 | 11 084 | 89 791 | 14 |
| 47 | 78 723 | 88 942 | 11 058 | 89 781 | 13 |
| 48 | 78 739 | 88 968 | 11 032 | 89 771 | 12 |
| 49 | 78 756 | 88 994 | 11 006 | 89 761 | 11 |
| 50 | 78 772 | 89 020 | 10 980 | 89 752 | 10 |
| 51 | 78 788 | 89 046 | 10 954 | 89 742 | 9 |
| 52 | 78 805 | 89 073 | 10 927 | 89 732 | 8 |
| 53 | 78 821 | 89 099 | 10 901 | 89 722 | 7 |
| 54 | 78 837 | 89 125 | 10 875 | 89 712 | 6 |
| 55 | 78 853 | 89 151 | 10 849 | 89 702 | 5 |
| 56 | 78 869 | 89 177 | 10 823 | 89 693 | 4 |
| 57 | 78 886 | 89 203 | 10 797 | 89 683 | 3 |
| 58 | 78 902 | 89 229 | 10 771 | 89 673 | 2 |
| 59 | 78 918 | 89 255 | 10 745 | 89 663 | 1 |
| 60 | 78 934 | 89 281 | 10 719 | 89 653 | 0 |
| ′ | log cos 9 | log cot 9 | log tan 10 | log sin 9 | ′ |

**38°**

| ′ | log sin 9 | log tan 9 | log cot 10 | log cos 9 | ′ |
|---|---|---|---|---|---|
| 0 | 78 934 | 89 281 | 10 719 | 89 653 | 60 |
| 1 | 78 950 | 89 307 | 10 693 | 89 643 | 59 |
| 2 | 78 967 | 89 333 | 10 667 | 89 633 | 58 |
| 3 | 78 983 | 89 359 | 10 641 | 89 624 | 57 |
| 4 | 78 999 | 89 385 | 10 615 | 89 614 | 56 |
| 5 | 79 015 | 89 411 | 10 589 | 89 604 | 55 |
| 6 | 79 031 | 89 437 | 10 563 | 89 594 | 54 |
| 7 | 79 047 | 89 463 | 10 537 | 89 584 | 53 |
| 8 | 79 063 | 89 489 | 10 511 | 89 574 | 52 |
| 9 | 79 079 | 89 515 | 10 485 | 89 564 | 51 |
| 10 | 79 095 | 89 541 | 10 459 | 89 554 | 50 |
| 11 | 79 111 | 89 567 | 10 433 | 89 544 | 49 |
| 12 | 79 128 | 89 593 | 10 407 | 89 534 | 48 |
| 13 | 79 144 | 89 619 | 10 381 | 89 524 | 47 |
| 14 | 79 160 | 89 645 | 10 355 | 89 514 | 46 |
| 15 | 79 176 | 89 671 | 10 329 | 89 504 | 45 |
| 16 | 79 192 | 89 697 | 10 303 | 89 495 | 44 |
| 17 | 79 208 | 89 723 | 10 277 | 89 485 | 43 |
| 18 | 79 224 | 89 749 | 10 251 | 89 475 | 42 |
| 19 | 79 240 | 89 775 | 10 225 | 89 465 | 41 |
| 20 | 79 256 | 89 801 | 10 199 | 89 455 | 40 |
| 21 | 79 272 | 89 827 | 10 173 | 89 445 | 39 |
| 22 | 79 288 | 89 853 | 10 147 | 89 435 | 38 |
| 23 | 79 304 | 89 879 | 10 121 | 89 425 | 37 |
| 24 | 79 319 | 89 905 | 10 095 | 89 415 | 36 |
| 25 | 79 335 | 89 931 | 10 069 | 89 405 | 35 |
| 26 | 79 351 | 89 957 | 10 043 | 89 395 | 34 |
| 27 | 79 367 | 89 983 | 10 017 | 89 385 | 33 |
| 28 | 79 383 | 90 009 | 09 991 | 89 375 | 32 |
| 29 | 79 399 | 90 035 | 09 965 | 89 364 | 31 |
| 30 | 79 415 | 90 061 | 09 939 | 89 354 | 30 |
| 31 | 79 431 | 90 086 | 09 914 | 89 344 | 29 |
| 32 | 79 447 | 90 112 | 09 888 | 89 334 | 28 |
| 33 | 79 463 | 90 138 | 09 862 | 89 324 | 27 |
| 34 | 79 478 | 90 164 | 09 836 | 89 314 | 26 |
| 35 | 79 494 | 90 190 | 09 810 | 89 304 | 25 |
| 36 | 79 510 | 90 216 | 09 784 | 89 294 | 24 |
| 37 | 79 526 | 90 242 | 09 758 | 89 284 | 23 |
| 38 | 79 542 | 90 268 | 09 732 | 89 274 | 22 |
| 39 | 79 558 | 90 294 | 09 706 | 89 264 | 21 |
| 40 | 79 573 | 90 320 | 09 680 | 89 254 | 20 |
| 41 | 79 589 | 90 346 | 09 654 | 89 244 | 19 |
| 42 | 79 605 | 90 371 | 09 629 | 89 233 | 18 |
| 43 | 79 621 | 90 397 | 09 603 | 89 223 | 17 |
| 44 | 79 636 | 90 423 | 09 577 | 89 213 | 16 |
| 45 | 79 652 | 90 449 | 09 551 | 89 203 | 15 |
| 46 | 79 668 | 90 475 | 09 525 | 89 193 | 14 |
| 47 | 79 684 | 90 501 | 09 499 | 89 183 | 13 |
| 48 | 79 699 | 90 527 | 09 473 | 89 173 | 12 |
| 49 | 79 715 | 90 553 | 09 447 | 89 162 | 11 |
| 50 | 79 731 | 90 578 | 09 422 | 89 152 | 10 |
| 51 | 79 746 | 90 604 | 09 396 | 89 142 | 9 |
| 52 | 79 762 | 90 630 | 09 370 | 89 132 | 8 |
| 53 | 79 778 | 90 656 | 09 344 | 89 122 | 7 |
| 54 | 79 793 | 90 682 | 09 318 | 89 112 | 6 |
| 55 | 79 809 | 90 708 | 09 292 | 89 101 | 5 |
| 56 | 79 825 | 90 734 | 09 266 | 89 091 | 4 |
| 57 | 79 840 | 90 759 | 09 241 | 89 081 | 3 |
| 58 | 79 856 | 90 785 | 09 215 | 89 071 | 2 |
| 59 | 79 872 | 90 811 | 09 189 | 89 060 | 1 |
| 60 | 79 887 | 90 837 | 09 163 | 89 050 | 0 |
| ′ | log cos 9 | log cot 9 | log tan 10 | log sin 9 | ′ |

| ' | log sin −9− | log tan −9− | log cot −10− | log cos −9− | ' | | ' | log sin −9− | log tan −9− | log cot −10− | log cos −9− | ' |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 79 887 | 90 837 | 09 163 | 89 050 | 60 | | 0 | 80 807 | 92 381 | 07 619 | 88 425 | 60 |
| 1 | 79 903 | 90 863 | 09 137 | 89 040 | 59 | | 1 | 80 822 | 92 407 | 07 593 | 88 415 | 59 |
| 2 | 79 918 | 90 889 | 09 111 | 89 030 | 58 | | 2 | 80 837 | 92 433 | 07 567 | 88 404 | 58 |
| 3 | 79 934 | 90 914 | 09 086 | 89 020 | 57 | | 3 | 80 852 | 92 458 | 07 542 | 88 394 | 57 |
| 4 | 79 950 | 90 940 | 09 060 | 89 009 | 56 | | 4 | 80 867 | 92 484 | 07 516 | 88 383 | 56 |
| 5 | 79 965 | 90 966 | 09 034 | 88 999 | 55 | | 5 | 80 882 | 92 510 | 07 490 | 88 372 | 55 |
| 6 | 79 981 | 90 992 | 09 008 | 88 989 | 54 | | 6 | 80 897 | 92 535 | 07 465 | 88 362 | 54 |
| 7 | 79 996 | 91 018 | 08 982 | 88 978 | 53 | | 7 | 80 912 | 92 561 | 07 439 | 88 351 | 53 |
| 8 | 80 012 | 91 043 | 08 957 | 88 968 | 52 | | 8 | 80 927 | 92 587 | 07 413 | 88 340 | 52 |
| 9 | 80 027 | 91 069 | 08 931 | 88 958 | 51 | | 9 | 80 942 | 92 612 | 07 388 | 88 330 | 51 |
| 10 | 80 043 | 91 095 | 08 905 | 88 948 | 50 | | 10 | 80 957 | 92 638 | 07 362 | 88 319 | 50 |
| 11 | 80 058 | 91 121 | 08 879 | 88 937 | 49 | | 11 | 80 972 | 92 663 | 07 337 | 88 308 | 49 |
| 12 | 80 074 | 91 147 | 08 853 | 88 927 | 48 | | 12 | 80 987 | 92 689 | 07 311 | 88 298 | 48 |
| 13 | 80 089 | 91 172 | 08 828 | 88 917 | 47 | | 13 | 81 002 | 92 715 | 07 285 | 88 287 | 47 |
| 14 | 80 105 | 91 198 | 08 802 | 88 906 | 46 | | 14 | 81 017 | 92 740 | 07 260 | 88 276 | 46 |
| 15 | 80 120 | 91 224 | 08 776 | 88 896 | 45 | | 15 | 81 032 | 92 766 | 07 234 | 88 266 | 45 |
| 16 | 80 136 | 91 250 | 08 750 | 88 886 | 44 | | 16 | 81 047 | 92 792 | 07 208 | 88 255 | 44 |
| 17 | 80 151 | 91 276 | 08 724 | 88 875 | 43 | | 17 | 81 061 | 92 817 | 07 183 | 88 244 | 43 |
| 18 | 80 166 | 91 301 | 08 699 | 88 865 | 42 | | 18 | 81 076 | 92 843 | 07 157 | 88 234 | 42 |
| 19 | 80 182 | 91 327 | 08 673 | 88 855 | 41 | | 19 | 81 091 | 92 868 | 07 132 | 88 223 | 41 |
| 20 | 80 197 | 91 353 | 08 647 | 88 844 | 40 | | 20 | 81 106 | 92 894 | 07 106 | 88 212 | 40 |
| 21 | 80 213 | 91 379 | 08 621 | 88 834 | 39 | | 21 | 81 121 | 92 920 | 07 080 | 88 201 | 39 |
| 22 | 80 228 | 91 404 | 08 596 | 88 824 | 38 | | 22 | 81 136 | 92 945 | 07 055 | 88 191 | 38 |
| 23 | 80 244 | 91 430 | 08 570 | 88 813 | 37 | | 23 | 81 151 | 92 971 | 07 029 | 88 180 | 37 |
| 24 | 80 259 | 91 456 | 08 544 | 88 803 | 36 | | 24 | 81 166 | 92 996 | 07 004 | 88 169 | 36 |
| 25 | 80 274 | 91 482 | 08 518 | 88 793 | 35 | | 25 | 81 180 | 93 022 | 06 978 | 88 158 | 35 |
| 26 | 80 290 | 91 507 | 08 493 | 88 782 | 34 | | 26 | 81 195 | 93 048 | 06 952 | 88 148 | 34 |
| 27 | 80 305 | 91 533 | 08 467 | 88 772 | 33 | | 27 | 81 210 | 93 073 | 06 927 | 88 137 | 33 |
| 28 | 80 320 | 91 559 | 08 441 | 88 761 | 32 | | 28 | 81 225 | 93 099 | 06 901 | 88 126 | 32 |
| 29 | 80 336 | 91 585 | 08 415 | 88 751 | 31 | | 29 | 81 240 | 93 124 | 06 876 | 88 115 | 31 |
| 30 | 80 351 | 91 610 | 08 390 | 88 741 | 30 | | 30 | 81 254 | 93 150 | 06 850 | 88 105 | 30 |
| 31 | 80 366 | 91 636 | 08 364 | 88 730 | 29 | | 31 | 81 269 | 93 175 | 06 825 | 88 094 | 29 |
| 32 | 80 382 | 91 662 | 08 338 | 88 720 | 28 | | 32 | 81 284 | 93 201 | 06 799 | 88 083 | 28 |
| 33 | 80 397 | 91 688 | 08 312 | 88 709 | 27 | | 33 | 81 299 | 93 227 | 06 773 | 88 072 | 27 |
| 34 | 80 412 | 91 713 | 08 287 | 88 699 | 26 | | 34 | 81 314 | 93 252 | 06 748 | 88 061 | 26 |
| 35 | 80 428 | 91 739 | 08 261 | 88 688 | 25 | | 35 | 81 328 | 93 278 | 06 722 | 88 051 | 25 |
| 36 | 80 443 | 91 765 | 08 235 | 88 678 | 24 | | 36 | 81 343 | 93 303 | 06 697 | 88 040 | 24 |
| 37 | 80 458 | 91 791 | 08 209 | 88 668 | 23 | | 37 | 81 358 | 93 329 | 06 671 | 88 029 | 23 |
| 38 | 80 473 | 91 816 | 08 184 | 88 657 | 22 | | 38 | 81 372 | 93 354 | 06 646 | 88 018 | 22 |
| 39 | 80 489 | 91 842 | 08 158 | 88 647 | 21 | | 39 | 81 387 | 93 380 | 06 620 | 88 007 | 21 |
| 40 | 80 504 | 91 868 | 08 132 | 88 636 | 20 | | 40 | 81 402 | 93 406 | 06 594 | 87 996 | 20 |
| 41 | 80 519 | 91 893 | 08 107 | 88 626 | 19 | | 41 | 81 417 | 93 431 | 06 569 | 87 985 | 19 |
| 42 | 80 534 | 91 919 | 08 081 | 88 615 | 18 | | 42 | 81 431 | 93 457 | 06 543 | 87 975 | 18 |
| 43 | 80 550 | 91 945 | 08 055 | 88 605 | 17 | | 43 | 81 446 | 93 482 | 06 518 | 87 964 | 17 |
| 44 | 80 565 | 91 971 | 08 029 | 88 594 | 16 | | 44 | 81 461 | 93 508 | 06 492 | 87 953 | 16 |
| 45 | 80 580 | 91 996 | 08 004 | 88 584 | 15 | | 45 | 81 475 | 93 533 | 06 467 | 87 942 | 15 |
| 46 | 80 595 | 92 022 | 07 978 | 88 573 | 14 | | 46 | 81 490 | 93 559 | 06 441 | 87 931 | 14 |
| 47 | 80 610 | 92 048 | 07 952 | 88 563 | 13 | | 47 | 81 505 | 93 584 | 06 416 | 87 920 | 13 |
| 48 | 80 625 | 92 073 | 07 927 | 88 552 | 12 | | 48 | 81 519 | 93 610 | 06 390 | 87 909 | 12 |
| 49 | 80 641 | 92 099 | 07 901 | 88 542 | 11 | | 49 | 81 534 | 93 636 | 06 364 | 87 898 | 11 |
| 50 | 80 656 | 92 125 | 07 875 | 88 531 | 10 | | 50 | 81 549 | 93 661 | 06 339 | 87 887 | 10 |
| 51 | 80 671 | 92 150 | 07 850 | 88 521 | 9 | | 51 | 81 563 | 93 687 | 06 313 | 87 877 | 9 |
| 52 | 80 686 | 92 176 | 07 824 | 88 510 | 8 | | 52 | 81 578 | 93 712 | 06 288 | 87 866 | 8 |
| 53 | 80 701 | 92 202 | 07 798 | 88 499 | 7 | | 53 | 81 592 | 93 738 | 06 262 | 87 855 | 7 |
| 54 | 80 716 | 92 227 | 07 773 | 88 489 | 6 | | 54 | 81 607 | 93 763 | 06 237 | 87 844 | 6 |
| 55 | 80 731 | 92 253 | 07 747 | 88 478 | 5 | | 55 | 81 622 | 93 789 | 06 211 | 87 833 | 5 |
| 56 | 80 746 | 92 279 | 07 721 | 88 468 | 4 | | 56 | 81 636 | 93 814 | 06 186 | 87 822 | 4 |
| 57 | 80 762 | 92 304 | 07 696 | 88 457 | 3 | | 57 | 81 651 | 93 840 | 06 160 | 87 811 | 3 |
| 58 | 80 777 | 92 330 | 07 670 | 88 447 | 2 | | 58 | 81 665 | 93 865 | 06 135 | 87 800 | 2 |
| 59 | 80 792 | 92 356 | 07 644 | 88 436 | 1 | | 59 | 81 680 | 93 891 | 06 109 | 87 789 | 1 |
| 60 | 80 807 | 92 381 | 07 619 | 88 425 | 0 | | 60 | 81 694 | 93 916 | 06 084 | 87 778 | 0 |
| ' | log cos −9− | log cot −9− | log tan −10− | log sin −9− | ' | | ' | log cos −9− | log cot −9− | log tan −10− | log sin −9− | ' |

| ′ | log sin 9 | log tan 9 | log cot 10 | log cos 9 | ′ |
|---|---|---|---|---|---|
| 0 | 81 694 | 93 916 | 06 084 | 87 778 | 60 |
| 1 | 81 709 | 93 942 | 06 058 | 87 767 | 59 |
| 2 | 81 723 | 93 967 | 06 033 | 87 756 | 58 |
| 3 | 81 738 | 93 993 | 06 007 | 87 745 | 57 |
| 4 | 81 752 | 94 018 | 05 982 | 87 734 | 56 |
| 5 | 81 767 | 94 044 | 05 956 | 87 723 | 55 |
| 6 | 81 781 | 94 069 | 05 931 | 87 712 | 54 |
| 7 | 81 796 | 94 095 | 05 905 | 87 701 | 53 |
| 8 | 81 810 | 94 120 | 05 880 | 87 690 | 52 |
| 9 | 81 825 | 94 146 | 05 854 | 87 679 | 51 |
| 10 | 81 839 | 94 171 | 05 829 | 87 668 | 50 |
| 11 | 81 854 | 94 197 | 05 803 | 87 657 | 49 |
| 12 | 81 868 | 94 222 | 05 778 | 87 646 | 48 |
| 13 | 81 882 | 94 248 | 05 752 | 87 635 | 47 |
| 14 | 81 897 | 94 273 | 05 727 | 87 624 | 46 |
| 15 | 81 911 | 94 299 | 05 701 | 87 613 | 45 |
| 16 | 81 926 | 94 324 | 05 676 | 87 601 | 44 |
| 17 | 81 940 | 94 350 | 05 650 | 87 590 | 43 |
| 18 | 81 955 | 94 375 | 05 625 | 87 579 | 42 |
| 19 | 81 969 | 94 401 | 05 599 | 87 568 | 41 |
| 20 | 81 983 | 94 426 | 05 574 | 87 557 | 40 |
| 21 | 81 998 | 94 452 | 05 548 | 87 546 | 39 |
| 22 | 82 012 | 94 477 | 05 523 | 87 535 | 38 |
| 23 | 82 026 | 94 503 | 05 497 | 87 524 | 37 |
| 24 | 82 041 | 94 528 | 05 472 | 87 513 | 36 |
| 25 | 82 055 | 94 554 | 05 446 | 87 501 | 35 |
| 26 | 82 069 | 94 579 | 05 421 | 87 490 | 34 |
| 27 | 82 084 | 94 604 | 05 396 | 87 479 | 33 |
| 28 | 82 098 | 94 630 | 05 370 | 87 468 | 32 |
| 29 | 82 112 | 94 655 | 05 345 | 87 457 | 31 |
| 30 | 82 126 | 94 681 | 05 319 | 87 446 | 30 |
| 31 | 82 141 | 94 706 | 05 294 | 87 434 | 29 |
| 32 | 82 155 | 94 732 | 05 268 | 87 423 | 28 |
| 33 | 82 169 | 94 757 | 05 243 | 87 412 | 27 |
| 34 | 82 184 | 94 783 | 05 217 | 87 401 | 26 |
| 35 | 82 198 | 94 808 | 05 192 | 87 390 | 25 |
| 36 | 82 212 | 94 834 | 05 166 | 87 378 | 24 |
| 37 | 82 226 | 94 859 | 05 141 | 87 367 | 23 |
| 38 | 82 240 | 94 884 | 05 116 | 87 356 | 22 |
| 39 | 82 255 | 94 910 | 05 090 | 87 345 | 21 |
| 40 | 82 269 | 94 935 | 05 065 | 87 334 | 20 |
| 41 | 82 283 | 94 961 | 05 039 | 87 322 | 19 |
| 42 | 82 297 | 94 986 | 05 014 | 87 311 | 18 |
| 43 | 82 311 | 95 012 | 04 988 | 87 300 | 17 |
| 44 | 82 326 | 95 037 | 04 963 | 87 288 | 16 |
| 45 | 82 340 | 95 062 | 04 938 | 87 277 | 15 |
| 46 | 82 354 | 95 088 | 04 912 | 87 266 | 14 |
| 47 | 82 368 | 95 113 | 04 887 | 87 255 | 13 |
| 48 | 82 382 | 95 139 | 04 861 | 87 243 | 12 |
| 49 | 82 396 | 95 164 | 04 836 | 87 232 | 11 |
| 50 | 82 410 | 95 190 | 04 810 | 87 221 | 10 |
| 51 | 82 424 | 95 215 | 04 785 | 87 209 | 9 |
| 52 | 82 439 | 95 240 | 04 760 | 87 198 | 8 |
| 53 | 82 453 | 95 266 | 04 734 | 87 187 | 7 |
| 54 | 82 467 | 95 291 | 04 709 | 87 175 | 6 |
| 55 | 82 481 | 95 317 | 04 683 | 87 164 | 5 |
| 56 | 82 495 | 95 342 | 04 658 | 87 153 | 4 |
| 57 | 82 509 | 95 368 | 04 632 | 87 141 | 3 |
| 58 | 82 523 | 95 393 | 04 607 | 87 130 | 2 |
| 59 | 82 537 | 95 418 | 04 582 | 87 119 | 1 |
| 60 | 82 551 | 95 444 | 04 556 | 87 107 | 0 |
| ′ | log cos 9 | log cot 9 | log tan 10 | log sin 9 | ′ |

| ′ | log sin 9 | log tan 9 | log cot 10 | log cos 9 | ′ |
|---|---|---|---|---|---|
| 0 | 82 551 | 95 444 | 04 556 | 87 107 | 60 |
| 1 | 82 565 | 95 469 | 04 531 | 87 096 | 59 |
| 2 | 82 579 | 95 495 | 04 505 | 87 085 | 58 |
| 3 | 82 593 | 95 520 | 04 480 | 87 073 | 57 |
| 4 | 82 607 | 95 545 | 04 455 | 87 062 | 56 |
| 5 | 82 621 | 95 571 | 04 429 | 87 050 | 55 |
| 6 | 82 635 | 95 596 | 04 404 | 87 039 | 54 |
| 7 | 82 649 | 95 622 | 04 378 | 87 028 | 53 |
| 8 | 82 663 | 95 647 | 04 353 | 87 016 | 52 |
| 9 | 82 677 | 95 672 | 04 328 | 87 005 | 51 |
| 10 | 82 691 | 95 698 | 04 302 | 86 993 | 50 |
| 11 | 82 705 | 95 723 | 04 277 | 86 982 | 49 |
| 12 | 82 719 | 95 748 | 04 252 | 86 970 | 48 |
| 13 | 82 733 | 95 774 | 04 226 | 86 959 | 47 |
| 14 | 82 747 | 95 799 | 04 201 | 86 947 | 46 |
| 15 | 82 761 | 95 825 | 04 175 | 86 936 | 45 |
| 16 | 82 775 | 95 850 | 04 150 | 86 924 | 44 |
| 17 | 82 788 | 95 875 | 04 125 | 86 913 | 43 |
| 18 | 82 802 | 95 901 | 04 099 | 86 902 | 42 |
| 19 | 82 816 | 95 926 | 04 074 | 86 890 | 41 |
| 20 | 82 830 | 95 952 | 04 048 | 86 879 | 40 |
| 21 | 82 844 | 95 977 | 04 023 | 86 867 | 39 |
| 22 | 82 858 | 96 002 | 03 998 | 86 855 | 38 |
| 23 | 82 872 | 96 028 | 03 972 | 86 844 | 37 |
| 24 | 82 885 | 96 053 | 03 947 | 86 832 | 36 |
| 25 | 82 899 | 96 078 | 03 922 | 86 821 | 35 |
| 26 | 82 913 | 96 104 | 03 896 | 86 809 | 34 |
| 27 | 82 927 | 96 129 | 03 871 | 86 798 | 33 |
| 28 | 82 941 | 96 155 | 03 845 | 86 786 | 32 |
| 29 | 82 955 | 96 180 | 03 820 | 86 775 | 31 |
| 30 | 82 968 | 96 205 | 03 795 | 86 763 | 30 |
| 31 | 82 982 | 96 231 | 03 769 | 86 752 | 29 |
| 32 | 82 996 | 96 256 | 03 744 | 86 740 | 28 |
| 33 | 83 010 | 96 281 | 03 719 | 86 728 | 27 |
| 34 | 83 023 | 96 307 | 03 693 | 86 717 | 26 |
| 35 | 83 037 | 96 332 | 03 668 | 86 705 | 25 |
| 36 | 83 051 | 96 357 | 03 643 | 86 694 | 24 |
| 37 | 83 065 | 96 383 | 03 617 | 86 682 | 23 |
| 38 | 83 078 | 96 408 | 03 592 | 86 670 | 22 |
| 39 | 83 092 | 96 433 | 03 567 | 86 659 | 21 |
| 40 | 83 106 | 96 459 | 03 541 | 86 647 | 20 |
| 41 | 83 120 | 96 484 | 03 516 | 86 635 | 19 |
| 42 | 83 133 | 96 510 | 03 490 | 86 624 | 18 |
| 43 | 83 147 | 96 535 | 03 465 | 86 612 | 17 |
| 44 | 83 161 | 96 560 | 03 440 | 86 600 | 16 |
| 45 | 83 174 | 96 586 | 03 414 | 86 589 | 15 |
| 46 | 83 188 | 96 611 | 03 389 | 86 577 | 14 |
| 47 | 83 202 | 96 636 | 03 364 | 86 565 | 13 |
| 48 | 83 215 | 96 662 | 03 338 | 86 554 | 12 |
| 49 | 83 229 | 96 687 | 03 313 | 86 542 | 11 |
| 50 | 83 242 | 96 712 | 03 288 | 86 530 | 10 |
| 51 | 83 256 | 96 738 | 03 262 | 86 518 | 9 |
| 52 | 83 270 | 96 763 | 03 237 | 86 507 | 8 |
| 53 | 83 283 | 96 788 | 03 212 | 86 495 | 7 |
| 54 | 83 297 | 96 814 | 03 186 | 86 483 | 6 |
| 55 | 83 310 | 96 839 | 03 161 | 86 472 | 5 |
| 56 | 83 324 | 96 864 | 03 136 | 86 460 | 4 |
| 57 | 83 338 | 96 890 | 03 110 | 86 448 | 3 |
| 58 | 83 351 | 96 915 | 03 085 | 86 436 | 2 |
| 59 | 83 365 | 96 940 | 03 060 | 86 425 | 1 |
| 60 | 83 378 | 96 966 | 03 034 | 86 413 | 0 |
| ′ | log cos 9 | log cot 9 | log tan 10 | log sin 9 | ′ |

| ′ | log sin 9 | log tan 9 | log cot 10 | log cos 9 | ′ |  | ′ | log sin 9 | log tan 9 | log cot 10 | log cos 9 | ′ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 83 378 | 96 966 | 03 034 | 86 413 | 60 |  | 0 | 84 177 | 98 484 | 01 516 | 85 693 | 60 |
| 1 | 83 392 | 96 991 | 03 009 | 86 401 | 59 |  | 1 | 84 190 | 98 509 | 01 491 | 85 681 | 59 |
| 2 | 83 405 | 97 016 | 02 984 | 86 389 | 58 |  | 2 | 84 203 | 98 534 | 01 466 | 85 669 | 58 |
| 3 | 83 419 | 97 042 | 02 958 | 86 377 | 57 |  | 3 | 84 216 | 98 560 | 01 440 | 85 657 | 57 |
| 4 | 83 432 | 97 067 | 02 933 | 86 366 | 56 |  | 4 | 84 229 | 98 585 | 01 415 | 85 645 | 56 |
| 5 | 83 446 | 97 092 | 02 908 | 86 354 | 55 |  | 5 | 84 242 | 98 610 | 01 390 | 85 632 | 55 |
| 6 | 83 459 | 97 118 | 02 882 | 86 342 | 54 |  | 6 | 84 255 | 98 635 | 01 365 | 85 620 | 54 |
| 7 | 83 473 | 97 143 | 02 857 | 86 330 | 53 |  | 7 | 84 269 | 98 661 | 01 339 | 85 608 | 53 |
| 8 | 83 486 | 97 168 | 02 832 | 86 318 | 52 |  | 8 | 84 282 | 98 686 | 01 314 | 85 596 | 52 |
| 9 | 83 500 | 97 193 | 02 807 | 86 306 | 51 |  | 9 | 84 295 | 98 711 | 01 289 | 85 583 | 51 |
| 10 | 83 513 | 97 219 | 02 781 | 86 295 | 50 |  | 10 | 84 308 | 98 737 | 01 263 | 85 571 | 50 |
| 11 | 83 527 | 97 244 | 02 756 | 86 283 | 49 |  | 11 | 84 321 | 98 762 | 01 238 | 85 559 | 49 |
| 12 | 83 540 | 97 269 | 02 731 | 86 271 | 48 |  | 12 | 84 334 | 98 787 | 01 213 | 85 547 | 48 |
| 13 | 83 554 | 97 295 | 02 705 | 86 259 | 47 |  | 13 | 84 347 | 98 812 | 01 188 | 85 534 | 47 |
| 14 | 83 567 | 97 320 | 02 680 | 86 247 | 46 |  | 14 | 84 360 | 98 838 | 01 162 | 85 522 | 46 |
| 15 | 83 581 | 97 345 | 02 655 | 86 235 | 45 |  | 15 | 84 373 | 98 863 | 01 137 | 85 510 | 45 |
| 16 | 83 594 | 97 371 | 02 629 | 86 223 | 44 |  | 16 | 84 385 | 98 888 | 01 112 | 85 497 | 44 |
| 17 | 83 608 | 97 396 | 02 604 | 86 211 | 43 |  | 17 | 84 398 | 98 913 | 01 087 | 85 485 | 43 |
| 18 | 83 621 | 97 421 | 02 579 | 86 200 | 42 |  | 18 | 84 411 | 98 939 | 01 061 | 85 473 | 42 |
| 19 | 83 634 | 97 447 | 02 553 | 86 188 | 41 |  | 19 | 84 424 | 98 964 | 01 036 | 85 460 | 41 |
| 20 | 83 648 | 97 472 | 02 528 | 86 176 | 40 |  | 20 | 84 437 | 98 989 | 01 011 | 85 448 | 40 |
| 21 | 83 661 | 97 497 | 02 503 | 86 164 | 39 |  | 21 | 84 450 | 99 015 | 00 985 | 85 436 | 39 |
| 22 | 83 674 | 97 523 | 02 477 | 86 152 | 38 |  | 22 | 84 463 | 99 040 | 00 960 | 85 423 | 38 |
| 23 | 83 688 | 97 548 | 02 452 | 86 140 | 37 |  | 23 | 84 476 | 99 065 | 00 935 | 85 411 | 37 |
| 24 | 83 701 | 97 573 | 02 427 | 86 128 | 36 |  | 24 | 84 489 | 99 090 | 00 910 | 85 399 | 36 |
| 25 | 83 715 | 97 598 | 02 402 | 86 116 | 35 |  | 25 | 84 502 | 99 116 | 00 884 | 85 386 | 35 |
| 26 | 83 728 | 97 624 | 02 376 | 86 104 | 34 |  | 26 | 84 515 | 99 141 | 00 859 | 85 374 | 34 |
| 27 | 83 741 | 97 649 | 02 351 | 86 092 | 33 |  | 27 | 84 528 | 99 166 | 00 834 | 85 361 | 33 |
| 28 | 83 755 | 97 674 | 02 326 | 86 080 | 32 |  | 28 | 84 540 | 99 191 | 00 809 | 85 349 | 32 |
| 29 | 83 768 | 97 700 | 02 300 | 86 068 | 31 |  | 29 | 84 553 | 99 217 | 00 783 | 85 337 | 31 |
| 30 | 83 781 | 97 725 | 02 275 | 86 056 | 30 |  | 30 | 84 566 | 99 242 | 00 758 | 85 324 | 30 |
| 31 | 83 795 | 97 750 | 02 250 | 86 044 | 29 |  | 31 | 84 579 | 99 267 | 00 733 | 85 312 | 29 |
| 32 | 83 808 | 97 776 | 02 224 | 86 032 | 28 |  | 32 | 84 592 | 99 293 | 00 707 | 85 299 | 28 |
| 33 | 83 821 | 97 801 | 02 199 | 86 020 | 27 |  | 33 | 84 605 | 99 318 | 00 682 | 85 287 | 27 |
| 34 | 83 834 | 97 826 | 02 174 | 86 008 | 26 |  | 34 | 84 618 | 99 343 | 00 657 | 85 274 | 26 |
| 35 | 83 848 | 97 851 | 02 149 | 85 996 | 25 |  | 35 | 84 630 | 99 368 | 00 632 | 85 262 | 25 |
| 36 | 83 861 | 97 877 | 02 123 | 85 984 | 24 |  | 36 | 84 643 | 99 394 | 00 606 | 85 250 | 24 |
| 37 | 83 874 | 97 902 | 02 098 | 85 972 | 23 |  | 37 | 84 656 | 99 419 | 00 581 | 85 237 | 23 |
| 38 | 83 887 | 97 927 | 02 073 | 85 960 | 22 |  | 38 | 84 669 | 99 444 | 00 556 | 85 225 | 22 |
| 39 | 83 901 | 97 953 | 02 047 | 85 948 | 21 |  | 39 | 84 682 | 99 469 | 00 531 | 85 212 | 21 |
| 40 | 83 914 | 97 978 | 02 022 | 85 936 | 20 |  | 40 | 84 694 | 99 495 | 00 505 | 85 200 | 20 |
| 41 | 83 927 | 98 003 | 01 997 | 85 924 | 19 |  | 41 | 84 707 | 99 520 | 00 480 | 85 187 | 19 |
| 42 | 83 940 | 98 029 | 01 971 | 85 912 | 18 |  | 42 | 84 720 | 99 545 | 00 455 | 85 175 | 18 |
| 43 | 83 954 | 98 054 | 01 946 | 85 900 | 17 |  | 43 | 84 733 | 99 570 | 00 430 | 85 162 | 17 |
| 44 | 83 967 | 98 079 | 01 921 | 85 888 | 16 |  | 44 | 84 745 | 99 596 | 00 404 | 85 150 | 16 |
| 45 | 83 980 | 98 104 | 01 896 | 85 876 | 15 |  | 45 | 84 758 | 99 621 | 00 379 | 85 137 | 15 |
| 46 | 83 993 | 98 130 | 01 870 | 85 864 | 14 |  | 46 | 84 771 | 99 646 | 00 354 | 85 125 | 14 |
| 47 | 84 006 | 98 155 | 01 845 | 85 851 | 13 |  | 47 | 84 784 | 99 672 | 00 328 | 85 112 | 13 |
| 48 | 84 020 | 98 180 | 01 820 | 85 839 | 12 |  | 48 | 84 796 | 99 697 | 00 303 | 85 100 | 12 |
| 49 | 84 033 | 98 206 | 01 794 | 85 827 | 11 |  | 49 | 84 809 | 99 722 | 00 278 | 85 087 | 11 |
| 50 | 84 046 | 98 231 | 01 769 | 85 815 | 10 |  | 50 | 84 822 | 99 747 | 00 253 | 85 074 | 10 |
| 51 | 84 059 | 98 256 | 01 744 | 85 803 | 9 |  | 51 | 84 835 | 99 773 | 00 227 | 85 062 | 9 |
| 52 | 84 072 | 98 281 | 01 719 | 85 791 | 8 |  | 52 | 84 847 | 99 798 | 00 202 | 85 049 | 8 |
| 53 | 84 085 | 98 307 | 01 693 | 85 779 | 7 |  | 53 | 84 860 | 99 823 | 00 177 | 85 037 | 7 |
| 54 | 84 098 | 98 332 | 01 668 | 85 766 | 6 |  | 54 | 84 873 | 99 848 | 00 152 | 85 024 | 6 |
| 55 | 84 112 | 98 357 | 01 643 | 85 754 | 5 |  | 55 | 84 885 | 99 874 | 00 126 | 85 012 | 5 |
| 56 | 84 125 | 98 383 | 01 617 | 85 742 | 4 |  | 56 | 84 898 | 99 899 | 00 101 | 84 999 | 4 |
| 57 | 84 138 | 98 408 | 01 592 | 85 730 | 3 |  | 57 | 84 911 | 99 924 | 00 076 | 84 986 | 3 |
| 58 | 84 151 | 98 433 | 01 567 | 85 718 | 2 |  | 58 | 84 923 | 99 949 | 00 051 | 84 974 | 2 |
| 59 | 84 164 | 98 458 | 01 542 | 85 706 | 1 |  | 59 | 84 936 | 99 975 | 00 025 | 84 961 | 1 |
| 60 | 84 177 | 98 484 | 01 516 | 85 693 | 0 |  | 60 | 84 949 | 00 000 | 00 000 | 84 949 | 0 |
| ′ | log cos 9 | log cot 9 | log tan 10 | log sin 9 | ′ |  | ′ | log cos 9 | log cot 10 | log tan 10 | log sin 9 | ′ |

# TABLE IV.

———◆———

For Determining with Greater Accuracy than can be done by means of Table III. :

1. *log sin*, *log tan*, and *log cot*, when the angle is between 0° and 2° ;
2. *log cos*, *log tan*, and *log cot*, when the angle is between 88° and 90° ;
3. The value of the angle when the logarithm of the function does *not* lie between the limits **8. 54 684** and **11. 45 316**.

———◆———

### FORMULAS FOR THE USE OF THE NUMBERS S AND T.

#### I. When the angle $a$ is between 0° and 2° :

$$\log \sin a = \log a'' + S.$$
$$\log \tan a = \log a'' + T.$$
$$\log \cot a = \text{colog} \tan a.$$

$$\log a'' = \log \sin a - S,$$
$$= \log \tan a - T,$$
$$= \text{colog} \cot a - T.$$

#### II. When the angle $a$ is between 88° and 90° :

$$\log \cos a = \log (90°-a)'' + S.$$
$$\log \cot a = \log (90°-a)'' + T.$$
$$\log \tan a = \text{colog} \cot a.$$

$$\log (90°-a)'' = \log \cos a - S,$$
$$= \log \cot a - T,$$
$$= \text{colog} \tan a - T,$$
$$\text{and } a = 90° - (90°-a).$$

———∘∘⋙⋘∘∘———

## Values of S and T.

| $a''$ | S | log sin $a$ | $a''$ | T | log tan $a$ | $a$ | T | log tan $a$ |
|---|---|---|---|---|---|---|---|---|
| 0 | | — | 0 | | — | 5 146 | | 8. 39 713 |
| | 4. 68 557 | | | 4. 68 557 | | | 4. 68 567 | |
| 2 409 | | 8. 06 740 | 200 | | 6. 98 660 | 5 424 | | 8. 41 999 |
| | 4. 68 556 | | | 4. 68 558 | | | 4. 68 568 | |
| 3 417 | | 8. 21 920 | 1 726 | | 7. 92 263 | 5 689 | | 8. 44 072 |
| | 4. 68 555 | | | 4. 68 559 | | | 4. 68 569 | |
| 3 823 | | 8. 26 795 | 2 432 | | 8. 07 156 | 5 941 | | 8. 45 955 |
| | 4. 68 555 | | | 4. 68 560 | | | 4. 68 570 | |
| 4 190 | | 8. 30 776 | 2 976 | | 8. 15 924 | 6 184 | | 8. 47 697 |
| | 4. 68 554 | | | 4. 68 561 | | | 4. 68 571 | |
| 4 840 | | 8. 37 038 | 3 434 | | 8. 22 142 | 6 417 | | 8. 49 305 |
| | 4. 68 553 | | | 4. 68 562 | | | 4. 68 572 | |
| 5 414 | | 8. 41 904 | 3 838 | | 8. 26 973 | 6 642 | | 8. 50 802 |
| | 4. 68 552 | | | 4. 68 563 | | | 4. 68 573 | |
| 5 932 | | 8. 45 872 | 4 204 | | 8. 30 930 | 6 859 | | 8. 52 200 |
| | 4. 68 551 | | | 4. 68 564 | | | 4. 68 574 | |
| 6 408 | | 8. 49 223 | 4 540 | | 8. 34 270 | 7 070 | | 8. 53 516 |
| | 4. 68 550 | | | 4. 68 565 | | | 4. 68 575 | |
| 6 633 | | 8. 50 721 | 4 699 | | 8. 35 766 | 7 173 | | 8. 54 145 |
| | 4. 68 550 | | | 4. 68 565 | | | 4. 68 575 | |
| 6 851 | | 8. 52 125 | 4 853 | | 8. 37 167 | 7 274 | | 8. 54 753 |
| | 4. 68 549 | | | 4. 68 566 | | | | |
| 7 267 | | 8. 54 684 | 5 146 | | 8. 39 713 | | | |
| $a''$ | S | log sin $a$ | $a''$ | T | log tan $a$ | $a$ | T | log tan $a$ |

# TABLE V. — CIRCUMFERENCES AND AREAS OF CIRCLES.  51

If $N =$ the radius of the circle, the circumference $= 2\pi N$.

If $N =$ the radius of the circle, the area $\qquad = \pi N^2$.

If $N =$ the circumference of the circle, the radius $= \dfrac{1}{2\pi} N$.

If $N =$ the circumference of the circle, the area $\quad = \dfrac{1}{4\pi} N^2$.

| N | $2\pi N$ | $\pi N^2$ | $\dfrac{1}{2\pi} N$ | $\dfrac{1}{4\pi} N^2$ | N | $2\pi N$ | $\pi N^2$ | $\dfrac{1}{2\pi} N$ | $\dfrac{1}{4\pi} N^2$ |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 0.0 | 0.000 | 0.00 | 50 | 314.16 | 7 854 | 7.96 | 198.94 |
| 1 | 6.28 | 3.1 | 0.159 | 0.08 | 51 | 320.44 | 8 171 | 8.12 | 206.98 |
| 2 | 12.57 | 12.6 | 0.318 | 0.32 | 52 | 326.73 | 8 495 | 8.28 | 215.18 |
| 3 | 18.85 | 28.3 | 0.477 | 0.72 | 53 | 333.01 | 8 825 | 8.44 | 223.53 |
| 4 | 25.13 | 50.3 | 0.637 | 1.27 | 54 | 339.29 | 9 161 | 8.59 | 232.05 |
| 5 | 31.42 | 78.5 | 0.796 | 1.99 | 55 | 345.58 | 9 503 | 8.75 | 240.72 |
| 6 | 37.70 | 113.1 | 0.955 | 2.86 | 56 | 351.86 | 9 852 | 8.91 | 249.55 |
| 7 | 43.98 | 153.9 | 1.114 | 3.90 | 57 | 358.14 | 10 207 | 9.07 | 258.55 |
| 8 | 50.27 | 201.1 | 1.273 | 5.09 | 58 | 364.42 | 10 568 | 9.23 | 267.70 |
| 9 | 56.55 | 254.5 | 1.432 | 6.45 | 59 | 370.71 | 10 936 | 9.39 | 277.01 |
| 10 | 62.83 | 314.2 | 1.592 | 7.96 | 60 | 376.99 | 11 310 | 9.55 | 286.48 |
| 11 | 69.12 | 380.1 | 1.751 | 9.63 | 61 | 383.27 | 11 690 | 9.71 | 296.11 |
| 12 | 75.40 | 452.4 | 1.910 | 11.46 | 62 | 389.56 | 12 076 | 9.87 | 305.90 |
| 13 | 81.68 | 530.9 | 2.069 | 13.45 | 63 | 395.84 | 12 469 | 10.03 | 315.84 |
| 14 | 87.96 | 615.8 | 2.228 | 15.60 | 64 | 402.12 | 12 868 | 10.19 | 325.95 |
| 15 | 94.25 | 706.9 | 2.387 | 17.90 | 65 | 408.41 | 13 273 | 10.35 | 336.21 |
| 16 | 100.53 | 804.2 | 2.546 | 20.37 | 66 | 414.69 | 13 685 | 10.50 | 346.64 |
| 17 | 106.81 | 907.9 | 2.706 | 23.00 | 67 | 420.97 | 14 103 | 10.66 | 357.22 |
| 18 | 113.10 | 1 017.9 | 2.865 | 25.78 | 68 | 427.26 | 14 527 | 10.82 | 367.97 |
| 19 | 119.38 | 1 134.1 | 3.024 | 28.73 | 69 | 433.54 | 14 957 | 10.98 | 378.87 |
| 20 | 125.66 | 1 256.6 | 3.183 | 31.83 | 70 | 439.82 | 15 394 | 11.14 | 389.93 |
| 21 | 131.95 | 1 385.4 | 3.342 | 35.09 | 71 | 446.11 | 15 837 | 11.30 | 401.15 |
| 22 | 138.23 | 1 520.5 | 3.501 | 38.52 | 72 | 452.39 | 16 286 | 11.46 | 412.53 |
| 23 | 144.51 | 1 661.9 | 3.661 | 42.10 | 73 | 458.67 | 16 742 | 11.62 | 424.07 |
| 24 | 150.80 | 1 809.6 | 3.820 | 45.84 | 74 | 464.96 | 17 203 | 11.78 | 435.77 |
| 25 | 157.08 | 1 963.5 | 3.979 | 49.74 | 75 | 471.24 | 17 671 | 11.94 | 447.62 |
| 26 | 163.36 | 2 123.7 | 4.138 | 53.79 | 76 | 477.52 | 18 146 | 12.10 | 459.64 |
| 27 | 169.65 | 2 290.2 | 4.297 | 58.01 | 77 | 483.81 | 18 627 | 12.25 | 471.81 |
| 28 | 175.93 | 2 463.0 | 4.456 | 62.39 | 78 | 490.09 | 19 113 | 12.41 | 484.15 |
| 29 | 182.21 | 2 642.1 | 4.615 | 66.92 | 79 | 496.37 | 19 607 | 12.57 | 496.64 |
| 30 | 188.50 | 2 827.4 | 4.775 | 71.62 | 80 | 502.65 | 20 106 | 12.73 | 509.30 |
| 31 | 194.78 | 3 019.1 | 4.934 | 76.47 | 81 | 508.94 | 20 612 | 12.89 | 522.11 |
| 32 | 201.06 | 3 217.0 | 5.093 | 81.49 | 82 | 515.22 | 21 124 | 13.05 | 535.08 |
| 33 | 207.35 | 3 421.2 | 5.252 | 86.66 | 83 | 521.50 | 21 642 | 13.21 | 548.21 |
| 34 | 213.63 | 3 631.7 | 5.411 | 91.99 | 84 | 527.79 | 22 167 | 13.37 | 561.50 |
| 35 | 219.91 | 3 848.5 | 5.570 | 97.48 | 85 | 534.07 | 22 698 | 13.53 | 574.95 |
| 36 | 226.19 | 4 071.5 | 5.730 | 103.13 | 86 | 540.35 | 23 235 | 13.69 | 588.55 |
| 37 | 232.48 | 4 300.8 | 5.889 | 108.94 | 87 | 546.64 | 23 779 | 13.85 | 602.32 |
| 38 | 238.76 | 4 536.5 | 6.048 | 114.91 | 88 | 552.92 | 24 328 | 14.01 | 616.25 |
| 39 | 245.04 | 4 778.4 | 6.207 | 121.04 | 89 | 559.20 | 24 885 | 14.16 | 630.33 |
| 40 | 251.33 | 5 026.5 | 6.366 | 127.32 | 90 | 565.49 | 25 447 | 14.32 | 644.58 |
| 41 | 257.61 | 5 281.0 | 6.525 | 133.77 | 91 | 571.77 | 26 016 | 14.48 | 658.98 |
| 42 | 263.89 | 5 541.8 | 6.685 | 140.37 | 92 | 578.05 | 26 590 | 14.64 | 673.54 |
| 43 | 270.18 | 5 808.8 | 6.844 | 147.14 | 93 | 584.34 | 27 172 | 14.80 | 688.27 |
| 44 | 276.46 | 6 082.1 | 7.003 | 154.06 | 94 | 590.62 | 27 759 | 14.96 | 703.15 |
| 45 | 282.74 | 6 361.7 | 7.162 | 161.14 | 95 | 596.90 | 28 353 | 15.12 | 718.19 |
| 46 | 289.03 | 6 647.6 | 7.321 | 168.39 | 96 | 603.19 | 28 953 | 15.28 | 733.39 |
| 47 | 295.31 | 6 939.8 | 7.480 | 175.79 | 97 | 609.47 | 29 559 | 15.44 | 748.74 |
| 48 | 301.59 | 7 238.2 | 7.639 | 183.35 | 98 | 615.75 | 30 172 | 15.60 | 764.26 |
| 49 | 307.88 | 7 543.0 | 7.799 | 191.07 | 99 | 622.04 | 30 791 | 15.76 | 779.94 |
| 50 | 314.16 | 7 854.0 | 7.958 | 198.94 | 100 | 628.32 | 31 416 | 15.92 | 795.77 |
| N | $2\pi N$ | $\pi N^2$ | $\dfrac{1}{2\pi} N$ | $\dfrac{1}{4\pi} N^2$ | N | $2\pi N$ | $\pi N^2$ | $\dfrac{1}{2\pi} N$ | $\dfrac{1}{4\pi} N^2$ |

# TABLE VI.—NATURAL FUNCTIONS.

| ′ | 0° sin | cos | 1° sin | cos | 2° sin | cos | 3° sin | cos | 4° sin | cos | ′ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **0** | 0000 | 1.000 | 0175 | 9998 | 0349 | 9994 | 0523 | 9986 | 0698 | 9976 | **60** |
| 1 | 0003 | 1.000 | 0177 | 9998 | 0352 | 9994 | 0526 | 9986 | 0700 | 9975 | 59 |
| 2 | 0006 | 1.000 | 0180 | 9998 | 0355 | 9994 | 0529 | 9986 | 0703 | 9975 | 58 |
| 3 | 0009 | 1.000 | 0183 | 9998 | 0358 | 9994 | 0532 | 9986 | 0706 | 9975 | 57 |
| 4 | 0012 | 1.000 | 0186 | 9998 | 0361 | 9993 | 0535 | 9986 | 0709 | 9975 | 56 |
| 5 | 0015 | 1.000 | 0189 | 9998 | 0364 | 9993 | 0538 | 9986 | 0712 | 9975 | 55 |
| 6 | 0017 | 1.000 | 0192 | 9998 | 0366 | 9993 | 0541 | 9985 | 0715 | 9974 | 54 |
| 7 | 0020 | 1.000 | 0195 | 9998 | 0369 | 9993 | 0544 | 9985 | 0718 | 9974 | 53 |
| 8 | 0023 | 1.000 | 0198 | 9998 | 0372 | 9993 | 0547 | 9985 | 0721 | 9974 | 52 |
| 9 | 0026 | 1.000 | 0201 | 9998 | 0375 | 9993 | 0550 | 9985 | 0724 | 9974 | 51 |
| **10** | 0029 | 1.000 | 0204 | 9998 | 0378 | 9993 | 0552 | 9985 | 0727 | 9974 | **50** |
| 11 | 0032 | 1.000 | 0207 | 9998 | 0381 | 9993 | 0555 | 9985 | 0729 | 9973 | 49 |
| 12 | 0035 | 1.000 | 0209 | 9998 | 0384 | 9993 | 0558 | 9984 | 0732 | 9973 | 48 |
| 13 | 0038 | 1.000 | 0212 | 9998 | 0387 | 9993 | 0561 | 9984 | 0735 | 9973 | 47 |
| 14 | 0041 | 1.000 | 0215 | 9998 | 0390 | 9992 | 0564 | 9984 | 0738 | 9973 | 46 |
| 15 | 0044 | 1.000 | 0218 | 9998 | 0393 | 9992 | 0567 | 9984 | 0741 | 9973 | 45 |
| 16 | 0047 | 1.000 | 0221 | 9998 | 0396 | 9992 | 0570 | 9984 | 0744 | 9972 | 44 |
| 17 | 0049 | 1.000 | 0224 | 9997 | 0398 | 9992 | 0573 | 9984 | 0747 | 9972 | 43 |
| 18 | 0052 | 1.000 | 0227 | 9997 | 0401 | 9992 | 0576 | 9983 | 0750 | 9972 | 42 |
| 19 | 0055 | 1.000 | 0230 | 9997 | 0404 | 9992 | 0579 | 9983 | 0753 | 9972 | 41 |
| **20** | 0058 | 1.000 | 0233 | 9997 | 0407 | 9992 | 0581 | 9983 | 0756 | 9971 | **40** |
| 21 | 0061 | 1.000 | 0236 | 9997 | 0410 | 9992 | 0584 | 9983 | 0758 | 9971 | 39 |
| 22 | 0064 | 1.000 | 0239 | 9997 | 0413 | 9991 | 0587 | 9983 | 0761 | 9971 | 38 |
| 23 | 0067 | 1.000 | 0241 | 9997 | 0416 | 9991 | 0590 | 9983 | 0764 | 9971 | 37 |
| 24 | 0070 | 1.000 | 0244 | 9997 | 0419 | 9991 | 0593 | 9982 | 0767 | 9971 | 36 |
| 25 | 0073 | 1.000 | 0247 | 9997 | 0422 | 9991 | 0596 | 9982 | 0770 | 9970 | 35 |
| 26 | 0076 | 1.000 | 0250 | 9997 | 0425 | 9991 | 0599 | 9982 | 0773 | 9970 | 34 |
| 27 | 0079 | 1.000 | 0253 | 9997 | 0427 | 9991 | 0602 | 9982 | 0776 | 9970 | 33 |
| 28 | 0081 | 1.000 | 0256 | 9997 | 0430 | 9991 | 0605 | 9982 | 0779 | 9970 | 32 |
| 29 | 0084 | 1.000 | 0259 | 9997 | 0433 | 9991 | 0608 | 9982 | 0782 | 9969 | 31 |
| **30** | 0087 | 1.000 | 0262 | 9997 | 0436 | 9990 | 0610 | 9981 | 0785 | 9969 | **30** |
| 31 | 0090 | 1.000 | 0265 | 9996 | 0439 | 9990 | 0613 | 9981 | 0787 | 9969 | 29 |
| 32 | 0093 | 1.000 | 0268 | 9996 | 0442 | 9990 | 0616 | 9981 | 0790 | 9969 | 28 |
| 33 | 0096 | 1.000 | 0270 | 9996 | 0445 | 9990 | 0619 | 9981 | 0793 | 9968 | 27 |
| 34 | 0099 | 1.000 | 0273 | 9996 | 0448 | 9990 | 0622 | 9981 | 0796 | 9968 | 26 |
| 35 | 0102 | 9999 | 0276 | 9996 | 0451 | 9990 | 0625 | 9980 | 0799 | 9968 | 25 |
| 36 | 0105 | 9999 | 0279 | 9996 | 0454 | 9990 | 0628 | 9980 | 0802 | 9968 | 24 |
| 37 | 0108 | 9999 | 0282 | 9996 | 0457 | 9990 | 0631 | 9980 | 0805 | 9968 | 23 |
| 38 | 0111 | 9999 | 0285 | 9996 | 0459 | 9989 | 0634 | 9980 | 0808 | 9967 | 22 |
| 39 | 0113 | 9999 | 0288 | 9996 | 0462 | 9989 | 0637 | 9980 | 0811 | 9967 | 21 |
| **40** | 0116 | 9999 | 0291 | 9996 | 0465 | 9989 | 0640 | 9980 | 0814 | 9967 | **20** |
| 41 | 0119 | 9999 | 0294 | 9996 | 0468 | 9989 | 0642 | 9979 | 0816 | 9967 | 19 |
| 42 | 0122 | 9999 | 0297 | 9996 | 0471 | 9989 | 0645 | 9979 | 0819 | 9966 | 18 |
| 43 | 0125 | 9999 | 0300 | 9996 | 0474 | 9989 | 0648 | 9979 | 0822 | 9966 | 17 |
| 44 | 0128 | 9999 | 0302 | 9995 | 0477 | 9989 | 0651 | 9979 | 0825 | 9966 | 16 |
| 45 | 0131 | 9999 | 0305 | 9995 | 0480 | 9988 | 0654 | 9979 | 0828 | 9966 | 15 |
| 46 | 0134 | 9999 | 0308 | 9995 | 0483 | 9988 | 0657 | 9978 | 0831 | 9965 | 14 |
| 47 | 0137 | 9999 | 0311 | 9995 | 0486 | 9988 | 0660 | 9978 | 0834 | 9965 | 13 |
| 48 | 0140 | 9999 | 0314 | 9995 | 0488 | 9988 | 0663 | 9978 | 0837 | 9965 | 12 |
| 49 | 0143 | 9999 | 0317 | 9995 | 0491 | 9988 | 0666 | 9978 | 0840 | 9965 | 11 |
| **50** | 0145 | 9999 | 0320 | 9995 | 0494 | 9988 | 0669 | 9978 | 0843 | 9964 | **10** |
| 51 | 0148 | 9999 | 0323 | 9995 | 0497 | 9988 | 0671 | 9977 | 0845 | 9964 | 9 |
| 52 | 0151 | 9999 | 0326 | 9995 | 0500 | 9987 | 0674 | 9977 | 0848 | 9964 | 8 |
| 53 | 0154 | 9999 | 0329 | 9995 | 0503 | 9987 | 0677 | 9977 | 0851 | 9964 | 7 |
| 54 | 0157 | 9999 | 0332 | 9995 | 0506 | 9987 | 0680 | 9977 | 0854 | 9963 | 6 |
| 55 | 0160 | 9999 | 0334 | 9994 | 0509 | 9987 | 0683 | 9977 | 0857 | 9963 | 5 |
| 56 | 0163 | 9999 | 0337 | 9994 | 0512 | 9987 | 0686 | 9976 | 0860 | 9963 | 4 |
| 57 | 0166 | 9999 | 0340 | 9994 | 0515 | 9987 | 0689 | 9976 | 0863 | 9963 | 3 |
| 58 | 0169 | 9999 | 0343 | 9994 | 0518 | 9987 | 0692 | 9976 | 0866 | 9962 | 2 |
| 59 | 0172 | 9999 | 0346 | 9994 | 0520 | 9986 | 0695 | 9976 | 0869 | 9962 | 1 |
| **60** | 0175 | 9999 | 0349 | 9994 | 0523 | 9986 | 0698 | 9976 | 0872 | 9962 | **0** |
| ′ | cos | sin | cos | sin | cos | sin | cos | sin | cos | sin | ′ |
| | **89°** | | **88°** | | **87°** | | **86°** | | **85°** | | |

| ′ | 5° sin | 5° cos | 6° sin | 6° cos | 7° sin | 7° cos | 8° sin | 8° cos | 9° sin | 9° cos | ′ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | sin | cos | sin | cos | sin | cos | sin | cos | sin | cos | |
| 0 | 0872 | 9962 | 1045 | 9945 | 1219 | 9925 | 1392 | 9903 | 1564 | 9877 | 60 |
| 1 | 0874 | 9962 | 1048 | 9945 | 1222 | 9925 | 1395 | 9902 | 1567 | 9876 | 59 |
| 2 | 0877 | 9461 | 1051 | 9945 | 1224 | 9925 | 1397 | 9902 | 1570 | 9876 | 58 |
| 3 | 0880 | 9961 | 1054 | 9944 | 1227 | 9924 | 1400 | 9901 | 1573 | 9876 | 57 |
| 4 | 0883 | 9961 | 1057 | 9944 | 1230 | 9924 | 1403 | 9901 | 1576 | 9875 | 56 |
| 5 | 0886 | 9961 | 1060 | 9944 | 1233 | 9924 | 1406 | 9901 | 1579 | 9875 | 55 |
| 6 | 0889 | 9960 | 1063 | 9943 | 1236 | 9923 | 1409 | 9900 | 1582 | 9874 | 54 |
| 7 | 0892 | 9960 | 1066 | 9943 | 1239 | 9923 | 1412 | 9900 | 1584 | 9874 | 53 |
| 8 | 0895 | 9960 | 1068 | 9943 | 1241 | 9923 | 1415 | 9899 | 1587 | 9873 | 52 |
| 9 | 0898 | 9960 | 1071 | 9942 | 1245 | 9922 | 1418 | 9899 | 1590 | 9873 | 51 |
| 10 | 0901 | 9959 | 1074 | 9942 | 1248 | 9922 | 1421 | 9899 | 1593 | 9872 | 50 |
| 11 | 0903 | 9959 | 1077 | 9942 | 1250 | 9922 | 1423 | 9898 | 1596 | 9872 | 49 |
| 12 | 0906 | 9959 | 1080 | 9942 | 1253 | 9921 | 1426 | 9898 | 1599 | 9871 | 48 |
| 13 | 0909 | 9959 | 1083 | 9941 | 1256 | 9921 | 1429 | 9897 | 1602 | 9871 | 47 |
| 14 | 0912 | 9958 | 1086 | 9941 | 1259 | 9920 | 1432 | 9897 | 1605 | 9870 | 46 |
| 15 | 0915 | 9958 | 1089 | 9941 | 1262 | 9920 | 1435 | 9897 | 1607 | 9870 | 45 |
| 16 | 0918 | 9958 | 1092 | 9940 | 1265 | 9920 | 1438 | 9896 | 1610 | 9869 | 44 |
| 17 | 0921 | 9958 | 1094 | 9940 | 1268 | 9919 | 1441 | 9896 | 1613 | 9869 | 43 |
| 18 | 0924 | 9957 | 1097 | 9940 | 1271 | 9919 | 1444 | 9895 | 1616 | 9869 | 42 |
| 19 | 0927 | 9957 | 1100 | 9939 | 1274 | 9919 | 1446 | 9895 | 1619 | 9868 | 41 |
| 20 | 0929 | 9957 | 1103 | 9939 | 1276 | 9918 | 1449 | 9894 | 1622 | 9868 | 40 |
| 21 | 0932 | 9956 | 1106 | 9939 | 1279 | 9918 | 1452 | 9894 | 1625 | 9867 | 39 |
| 22 | 0935 | 9956 | 1109 | 9938 | 1282 | 9917 | 1455 | 9894 | 1628 | 9867 | 38 |
| 23 | 0938 | 9956 | 1112 | 9938 | 1285 | 9917 | 1458 | 9893 | 1630 | 9866 | 37 |
| 24 | 0941 | 9956 | 1115 | 9938 | 1288 | 9917 | 1461 | 9893 | 1633 | 9866 | 36 |
| 25 | 0944 | 9955 | 1118 | 9937 | 1291 | 9916 | 1464 | 9892 | 1636 | 9865 | 35 |
| 26 | 0947 | 9955 | 1120 | 9937 | 1294 | 9916 | 1467 | 9892 | 1639 | 9865 | 34 |
| 27 | 0950 | 9955 | 1123 | 9937 | 1297 | 9916 | 1469 | 9891 | 1642 | 9864 | 33 |
| 28 | 0953 | 9955 | 1126 | 9936 | 1299 | 9915 | 1472 | 9891 | 1645 | 9864 | 32 |
| 29 | 0956 | 9954 | 1129 | 9936 | 1302 | 9915 | 1475 | 9891 | 1648 | 9863 | 31 |
| 30 | 0958 | 9954 | 1132 | 9936 | 1305 | 9914 | 1478 | 9890 | 1650 | 9863 | 30 |
| 31 | 0961 | 9954 | 1135 | 9935 | 1308 | 9914 | 1481 | 9890 | 1653 | 9862 | 29 |
| 32 | 9964 | 9953 | 1138 | 9935 | 1311 | 9914 | 1484 | 9889 | 1656 | 9862 | 28 |
| 33 | 0967 | 9953 | 1141 | 9935 | 1314 | 9913 | 1487 | 9889 | 1659 | 9861 | 27 |
| 34 | 0970 | 9953 | 1144 | 9934 | 1317 | 9913 | 1490 | 9888 | 1662 | 9861 | 26 |
| 35 | 0973 | 9553 | 1146 | 9934 | 1320 | 9913 | 1492 | 9888 | 1665 | 9860 | 25 |
| 36 | 0976 | 9952 | 1149 | 9934 | 1323 | 9912 | 1495 | 9888 | 1668 | 9860 | 24 |
| 37 | 0979 | 9952 | 1152 | 9933 | 1325 | 9912 | 1498 | 9887 | 1671 | 9859 | 23 |
| 38 | 0982 | 9952 | 1155 | 9933 | 1328 | 9911 | 1501 | 9887 | 1673 | 9859 | 22 |
| 39 | 0985 | 9951 | 1158 | 9933 | 1331 | 9911 | 1504 | 9886 | 1676 | 9859 | 21 |
| 40 | 0987 | 9951 | 1161 | 9932 | 1334 | 9911 | 1507 | 9886 | 1679 | 9858 | 20 |
| 41 | 0990 | 9951 | 1164 | 9932 | 1337 | 9910 | 1510 | 9885 | 1682 | 9858 | 19 |
| 42 | 0993 | 9951 | 1167 | 9932 | 1340 | 9910 | 1513 | 9885 | 1685 | 9857 | 18 |
| 43 | 0996 | 9950 | 1170 | 9931 | 1343 | 9909 | 1515 | 9884 | 1688 | 9857 | 17 |
| 44 | 0999 | 9950 | 1172 | 9931 | 1346 | 9909 | 1518 | 9884 | 1691 | 9856 | 16 |
| 45 | 1002 | 9950 | 1175 | 9931 | 1349 | 9909 | 1521 | 9884 | 1693 | 9856 | 15 |
| 46 | 1005 | 9949 | 1178 | 9930 | 1351 | 9908 | 1524 | 9883 | 1696 | 9855 | 14 |
| 47 | 1008 | 9949 | 1181 | 9930 | 1354 | 9908 | 1527 | 9883 | 1699 | 9855 | 13 |
| 48 | 1011 | 9949 | 1184 | 9930 | 1357 | 9907 | 1530 | 9882 | 1702 | 9854 | 12 |
| 49 | 1013 | 9949 | 1187 | 9929 | 1360 | 9907 | 1533 | 9882 | 1705 | 9854 | 11 |
| 50 | 1016 | 9948 | 1190 | 9929 | 1363 | 9907 | 1536 | 9881 | 1708 | 9853 | 10 |
| 51 | 1019 | 9948 | 1193 | 9929 | 1366 | 9906 | 1538 | 9881 | 1711 | 9853 | 9 |
| 52 | 1022 | 9948 | 1196 | 9928 | 1369 | 9906 | 1541 | 9880 | 1714 | 9852 | 8 |
| 53 | 1025 | 9947 | 1198 | 9928 | 1372 | 9905 | 1544 | 9880 | 1716 | 9852 | 7 |
| 54 | 1028 | 9947 | 1201 | 9928 | 1374 | 9905 | 1547 | 9880 | 1719 | 9851 | 6 |
| 55 | 1031 | 9947 | 1204 | 9927 | 1377 | 9905 | 1550 | 9879 | 1722 | 9851 | 5 |
| 56 | 1034 | 9946 | 1207 | 9927 | 1380 | 9904 | 1553 | 9879 | 1725 | 9850 | 4 |
| 57 | 1037 | 9946 | 1210 | 9927 | 1383 | 9904 | 1556 | 9878 | 1728 | 9850 | 3 |
| 58 | 1039 | 9946 | 1213 | 9926 | 1386 | 9903 | 1559 | 9878 | 1731 | 9849 | 2 |
| 59 | 1042 | 9946 | 1216 | 9926 | 1389 | 9903 | 1561 | 9877 | 1734 | 9849 | 1 |
| 60 | 1045 | 9945 | 1219 | 9925 | 1392 | 9903 | 1564 | 9877 | 1736 | 9848 | 0 |
| | cos | sin | cos | sin | cos | sin | cos | sin | cos | sin | |
| ′ | 84° | | 83° | | 82° | | 81° | | 80° | | ′ |

| ′ | 10° sin | cos | 11° sin | cos | 12° sin | cos | 13° sin | cos | 14° sin | cos | ′ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **0** | 1736 | 9848 | 1908 | 9816 | 2079 | 9781 | 2250 | 9744 | 2419 | 9703 | **60** |
| 1 | 1739 | 9848 | 1911 | 9816 | 2082 | 9781 | 2252 | 9743 | 2422 | 9702 | 59 |
| 2 | 1742 | 9847 | 1914 | 9815 | 2085 | 9780 | 2255 | 9742 | 2425 | 9702 | 58 |
| 3 | 1745 | 9847 | 1917 | 9815 | 2088 | 9780 | 2258 | 9742 | 2428 | 9701 | 57 |
| 4 | 1748 | 9846 | 1920 | 9814 | 2090 | 9779 | 2261 | 9741 | 2431 | 9700 | 56 |
| 5 | 1751 | 9846 | 1922 | 9813 | 2093 | 9778 | 2264 | 9740 | 2433 | 9699 | 55 |
| 6 | 1754 | 9845 | 1925 | 9813 | 2096 | 9778 | 2267 | 9740 | 2436 | 9699 | 54 |
| 7 | 1757 | 9845 | 1928 | 9812 | 2099 | 9777 | 2269 | 9739 | 2439 | 9698 | 53 |
| 8 | 1759 | 9844 | 1931 | 9812 | 2102 | 9777 | 2272 | 9738 | 2442 | 9697 | 52 |
| 9 | 1762 | 9843 | 1934 | 9811 | 2105 | 9776 | 2275 | 9738 | 2445 | 9697 | 51 |
| **10** | 1765 | 9843 | 1937 | 9811 | 2108 | 9775 | 2278 | 9737 | 2447 | 9696 | **50** |
| 11 | 1768 | 9842 | 1939 | 9810 | 2110 | 9775 | 2281 | 9736 | 2450 | 9695 | 49 |
| 12 | 1771 | 9842 | 1942 | 9810 | 2113 | 9774 | 2284 | 9736 | 2453 | 9694 | 48 |
| 13 | 1774 | 9841 | 1945 | 9809 | 2116 | 9774 | 2286 | 9735 | 2456 | 9694 | 47 |
| 14 | 1777 | 9841 | 1948 | 9808 | 2119 | 9773 | 2289 | 9734 | 2459 | 9693 | 46 |
| 15 | 1779 | 9840 | 1951 | 9808 | 2122 | 9772 | 2292 | 9734 | 2462 | 9692 | 45 |
| 16 | 1782 | 9840 | 1954 | 9807 | 2125 | 9772 | 2295 | 9733 | 2464 | 9692 | 44 |
| 17 | 1785 | 9839 | 1957 | 9807 | 2127 | 9771 | 2298 | 9732 | 2467 | 9691 | 43 |
| 18 | 1788 | 9839 | 1959 | 9806 | 2130 | 9770 | 2300 | 9732 | 2470 | 9690 | 42 |
| 19 | 1791 | 9838 | 1962 | 9806 | 2133 | 9770 | 2303 | 9731 | 2473 | 9689 | 41 |
| **20** | 1794 | 9838 | 1965 | 9805 | 2136 | 9769 | 2306 | 9730 | 2476 | 9689 | **40** |
| 21 | 1797 | 9837 | 1968 | 9804 | 2139 | 9769 | 2309 | 9730 | 2478 | 9688 | 39 |
| 22 | 1799 | 9837 | 1971 | 9804 | 2142 | 9768 | 2312 | 9729 | 2481 | 9687 | 38 |
| 23 | 1802 | 9836 | 1974 | 9803 | 2145 | 9767 | 2315 | 9728 | 2484 | 9687 | 37 |
| 24 | 1805 | 9836 | 1977 | 9803 | 2147 | 9767 | 2317 | 9728 | 2487 | 9686 | 36 |
| 25 | 1808 | 9835 | 1979 | 9802 | 2150 | 9766 | 2320 | 9727 | 2490 | 9685 | 35 |
| 26 | 1811 | 9835 | 1982 | 9802 | 2153 | 9765 | 2323 | 9726 | 2493 | 9684 | 34 |
| 27 | 1814 | 9834 | 1985 | 9801 | 2156 | 9765 | 2326 | 9726 | 2495 | 9684 | 33 |
| 28 | 1817 | 9834 | 1988 | 9800 | 2159 | 9764 | 2329 | 9725 | 2498 | 9683 | 32 |
| 29 | 1819 | 9833 | 1991 | 9800 | 2162 | 9764 | 2332 | 9724 | 2501 | 9682 | 31 |
| **30** | 1822 | 9833 | 1994 | 9799 | 2164 | 9763 | 2334 | 9724 | 2504 | 9681 | **30** |
| 31 | 1825 | 9832 | 1997 | 9799 | 2167 | 9762 | 2337 | 9723 | 2507 | 9681 | 29 |
| 32 | 1828 | 9831 | 1999 | 9798 | 2170 | 9762 | 2340 | 9722 | 2509 | 9680 | 28 |
| 33 | 1831 | 9831 | 2002 | 9798 | 2173 | 9761 | 3343 | 9722 | 2512 | 9679 | 27 |
| 34 | 1834 | 9830 | 2005 | 9797 | 2176 | 9760 | 2346 | 9721 | 2515 | 9679 | 26 |
| 35 | 1837 | 9830 | 2008 | 9796 | 2179 | 9760 | 2349 | 9720 | 2518 | 9678 | 25 |
| 36 | 1840 | 9829 | 2011 | 9796 | 2181 | 9759 | 2351 | 9720 | 2521 | 9677 | 24 |
| 37 | 1842 | 9829 | 2014 | 9795 | 2184 | 9759 | 2354 | 9719 | 2524 | 9676 | 23 |
| 38 | 1845 | 9828 | 2016 | 9795 | 2187 | 9758 | 2357 | 9718 | 2526 | 9676 | 22 |
| 39 | 1848 | 9828 | 2019 | 9794 | 2190 | 9757 | 2360 | 9718 | 2529 | 9675 | 21 |
| **40** | 1851 | 9827 | 2022 | 9793 | 2193 | 9757 | 2363 | 9717 | 2532 | 9674 | **20** |
| 41 | 1854 | 9827 | 2025 | 9793 | 2196 | 9756 | 2366 | 9716 | 2535 | 9673 | 19 |
| 42 | 1857 | 9826 | 2028 | 9792 | 2198 | 9755 | 2368 | 9715 | 2538 | 9673 | 18 |
| 43 | 1860 | 9826 | 2031 | 9792 | 2201 | 9755 | 2371 | 9715 | 2540 | 9672 | 17 |
| 44 | 1862 | 9825 | 2034 | 9791 | 2204 | 9754 | 2374 | 9714 | 2543 | 9671 | 16 |
| 45 | 1865 | 9825 | 2036 | 9790 | 2207 | 9753 | 2377 | 9713 | 2546 | 9670 | 15 |
| 46 | 1868 | 9824 | 2039 | 9790 | 2210 | 9753 | 2380 | 9713 | 2549 | 9670 | 14 |
| 47 | 1871 | 9823 | 2042 | 9789 | 2213 | 9752 | 2383 | 9712 | 2552 | 9669 | 13 |
| 48 | 1474 | 9823 | 2045 | 9789 | 2215 | 9751 | 2385 | 9711 | 2554 | 9668 | 12 |
| 49 | 1877 | 9822 | 2048 | 9788 | 2218 | 9751 | 2388 | 9711 | 2557 | 9667 | 11 |
| **50** | 1880 | 9822 | 2051 | 9787 | 2221 | 9750 | 2391 | 9710 | 2560 | 9667 | **10** |
| 51 | 1882 | 9821 | 2054 | 9787 | 2224 | 9750 | 2394 | 9709 | 2563 | 9666 | 9 |
| 52 | 1885 | 9821 | 2056 | 9786 | 2227 | 9749 | 2397 | 9709 | 2566 | 9665 | 8 |
| 53 | 1888 | 9820 | 2059 | 9786 | 2230 | 9748 | 2399 | 9708 | 2569 | 9665 | 7 |
| 54 | 1891 | 9820 | 2062 | 9785 | 2233 | 9748 | 2402 | 9707 | 2571 | 9664 | 6 |
| 55 | 1894 | 9819 | 2065 | 9784 | 2235 | 9747 | 2405 | 9706 | 2574 | 9663 | 5 |
| 56 | 1897 | 9818 | 2068 | 9784 | 2238 | 9746 | 2408 | 9706 | 2577 | 9662 | 4 |
| 57 | 1900 | 9818 | 2071 | 9783 | 2241 | 9746 | 2411 | 9705 | 2580 | 9662 | 3 |
| 58 | 1902 | 9817 | 2073 | 9783 | 2244 | 9745 | 2414 | 9704 | 2583 | 9661 | 2 |
| 59 | 1905 | 9817 | 2076 | 9782 | 2247 | 9744 | 2416 | 9704 | 2585 | 9660 | 1 |
| **60** | 1908 | 9816 | 2079 | 9781 | 2250 | 9744 | 2419 | 9703 | 2588 | 9659 | **0** |
| | cos | sin | cos | sin | cos | sin | cos | sin | cos | sin | |
| ′ | 79° | | 78° | | 77° | | 76° | | 75° | | ′ |

| ′ | 15° | | 16° | | 17° | | 18° | | 19° | | ′ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | sin | cos | sin | cos | sin | cos | sin | cos | sin | cos | |
| 0 | 2588 | 9659 | 2756 | 9613 | 2924 | 9563 | 3090 | 9511 | 3256 | 9455 | 60 |
| 1 | 2591 | 9659 | 2759 | 9612 | 2926 | 9562 | 3093 | 9510 | 3258 | 9454 | 59 |
| 2 | 2594 | 9658 | 2762 | 9611 | 2929 | 9561 | 3096 | 9509 | 3261 | 9453 | 58 |
| 3 | 2597 | 9657 | 2765 | 9610 | 2932 | 9560 | 3098 | 9508 | 3264 | 9452 | 57 |
| 4 | 2599 | 9656 | 2768 | 9609 | 2935 | 9560 | 3101 | 9507 | 3267 | 9451 | 56 |
| 5 | 2602 | 9655 | 2770 | 9609 | 2938 | 9559 | 3104 | 9506 | 3269 | 9450 | 55 |
| 6 | 2605 | 9655 | 2773 | 9608 | 2940 | 9558 | 3107 | 9505 | 3272 | 9449 | 54 |
| 7 | 2608 | 9654 | 2776 | 9607 | 2943 | 9557 | 3110 | 9504 | 3275 | 9449 | 53 |
| 8 | 2611 | 9653 | 2779 | 9606 | 2946 | 9556 | 3112 | 9503 | 3278 | 9448 | 52 |
| 9 | 2613 | 9652 | 2782 | 9605 | 2949 | 9555 | 3115 | 9502 | 3280 | 9447 | 51 |
| 10 | 2616 | 9652 | 2784 | 9605 | 2952 | 9555 | 3118 | 9502 | 3283 | 9446 | 50 |
| 11 | 2619 | 9651 | 2787 | 9604 | 2954 | 9554 | 3121 | 9501 | 3286 | 9445 | 49 |
| 12 | 2622 | 9650 | 2790 | 9603 | 2957 | 9553 | 3123 | 9500 | 3289 | 9444 | 48 |
| 13 | 2625 | 9649 | 2793 | 9602 | 2960 | 9552 | 3126 | 9499 | 3291 | 9443 | 47 |
| 14 | 2628 | 9649 | 2795 | 9601 | 2963 | 9551 | 3129 | 9498 | 3294 | 9442 | 46 |
| 15 | 2630 | 9648 | 2798 | 9600 | 2965 | 9550 | 3132 | 9497 | 3297 | 9441 | 45 |
| 16 | 2633 | 9647 | 2801 | 9600 | 2968 | 9549 | 3134 | 9496 | 3300 | 9440 | 44 |
| 17 | 2636 | 9646 | 2804 | 9599 | 2971 | 9548 | 3137 | 9495 | 3302 | 9439 | 43 |
| 18 | 2639 | 9646 | 2807 | 9598 | 2974 | 9548 | 3140 | 9494 | 3305 | 9438 | 42 |
| 19 | 2642 | 9645 | 2809 | 9597 | 2977 | 9547 | 3143 | 9493 | 3308 | 9437 | 41 |
| 20 | 2644 | 9644 | 2812 | 9596 | 2979 | 9546 | 3145 | 9492 | 3311 | 9436 | 40 |
| 21 | 2647 | 9643 | 2815 | 9596 | 2982 | 9545 | 3148 | 9492 | 3313 | 9435 | 39 |
| 22 | 2650 | 9642 | 2818 | 9595 | 2985 | 9544 | 3151 | 9491 | 3316 | 9434 | 38 |
| 23 | 2653 | 9642 | 2821 | 9594 | 2988 | 9543 | 3154 | 9490 | 3319 | 9433 | 37 |
| 24 | 2656 | 9641 | 2823 | 9593 | 2990 | 9542 | 3156 | 9489 | 3322 | 9432 | 36 |
| 25 | 2658 | 9640 | 2826 | 9592 | 2993 | 9542 | 3159 | 9488 | 3324 | 9431 | 35 |
| 26 | 2661 | 9639 | 2829 | 9591 | 2996 | 9541 | 3162 | 9487 | 3327 | 9430 | 34 |
| 27 | 2664 | 9639 | 2832 | 9591 | 2999 | 9540 | 3165 | 9486 | 3330 | 9429 | 33 |
| 28 | 2667 | 9638 | 2835 | 9590 | 3002 | 9539 | 3168 | 9485 | 3333 | 9428 | 32 |
| 29 | 2670 | 9637 | 2837 | 9589 | 3004 | 9538 | 3170 | 9484 | 3335 | 9427 | 31 |
| 30 | 2672 | 9636 | 2840 | 9588 | 3007 | 9537 | 3173 | 9483 | 3338 | 9426 | 30 |
| 31 | 2675 | 9636 | 2843 | 9587 | 3010 | 9536 | 3176 | 9482 | 3341 | 9425 | 29 |
| 32 | 2678 | 9635 | 2846 | 9587 | 3013 | 9535 | 3179 | 9481 | 3344 | 9424 | 28 |
| 33 | 2681 | 9634 | 2849 | 9586 | 3015 | 9535 | 3181 | 9480 | 3346 | 9423 | 27 |
| 34 | 2684 | 9633 | 2851 | 9585 | 3018 | 9534 | 3184 | 9480 | 3349 | 9423 | 26 |
| 35 | 2686 | 9632 | 2854 | 9584 | 3021 | 9533 | 3187 | 9479 | 3352 | 9422 | 25 |
| 36 | 2689 | 9632 | 2857 | 9583 | 3024 | 9532 | 3190 | 9478 | 3355 | 9421 | 24 |
| 37 | 2692 | 9631 | 2860 | 9582 | 3026 | 9531 | 3192 | 9477 | 3357 | 9420 | 23 |
| 38 | 2695 | 9630 | 2862 | 9582 | 3029 | 9530 | 3195 | 9476 | 3360 | 9419 | 22 |
| 39 | 2698 | 9629 | 2865 | 9581 | 3032 | 9529 | 3198 | 9475 | 3363 | 9418 | 21 |
| 40 | 2700 | 9628 | 2868 | 9580 | 3035 | 9528 | 3201 | 9474 | 3365 | 9417 | 20 |
| 41 | 2703 | 9628 | 2871 | 9579 | 3038 | 9527 | 3203 | 9473 | 3368 | 9416 | 19 |
| 42 | 2706 | 9627 | 2874 | 9578 | 3040 | 9527 | 3206 | 9472 | 3371 | 9415 | 18 |
| 43 | 2709 | 9626 | 2876 | 9577 | 3043 | 9526 | 3209 | 9471 | 3374 | 9414 | 17 |
| 44 | 2712 | 9625 | 2879 | 9577 | 3046 | 9525 | 3212 | 9470 | 3376 | 9413 | 16 |
| 45 | 2714 | 9625 | 2882 | 9576 | 3049 | 9524 | 3214 | 9469 | 3379 | 9412 | 15 |
| 46 | 2717 | 9624 | 2885 | 9575 | 3051 | 9523 | 3217 | 9468 | 3382 | 9411 | 14 |
| 47 | 2720 | 9623 | 2888 | 9574 | 3054 | 9522 | 3220 | 9467 | 3385 | 9410 | 13 |
| 48 | 2723 | 9622 | 2890 | 9573 | 3057 | 9521 | 3223 | 9466 | 3387 | 9409 | 12 |
| 49 | 2726 | 9621 | 2893 | 9572 | 3060 | 9520 | 3225 | 9466 | 3390 | 9408 | 11 |
| 50 | 2728 | 9621 | 2896 | 9572 | 3062 | 9520 | 3228 | 9465 | 3393 | 9407 | 10 |
| 51 | 2731 | 9620 | 2899 | 9571 | 3065 | 9519 | 3231 | 9464 | 3396 | 9406 | 9 |
| 52 | 2734 | 9619 | 2901 | 9570 | 3068 | 9518 | 3234 | 9463 | 3398 | 9405 | 8 |
| 53 | 2737 | 9618 | 2904 | 9569 | 3071 | 9517 | 3236 | 9462 | 3401 | 9404 | 7 |
| 54 | 2740 | 9617 | 2907 | 9568 | 3074 | 9516 | 3239 | 9461 | 3404 | 9403 | 6 |
| 55 | 2742 | 9617 | 2910 | 9567 | 3076 | 9515 | 3242 | 9460 | 3407 | 9402 | 5 |
| 56 | 2745 | 9616 | 2913 | 9566 | 3079 | 9514 | 3245 | 9459 | 3409 | 9401 | 4 |
| 57 | 2748 | 9615 | 2915 | 9566 | 3082 | 9513 | 3247 | 9458 | 3412 | 9400 | 3 |
| 58 | 2751 | 9614 | 2918 | 9565 | 3085 | 9512 | 3250 | 9457 | 3415 | 9399 | 2 |
| 59 | 2754 | 9613 | 2921 | 9564 | 3087 | 9511 | 3253 | 9456 | 3417 | 9398 | 1 |
| 60 | 2756 | 9613 | 2924 | 9563 | 3090 | 9511 | 3256 | 9455 | 3420 | 9397 | 0 |
| | cos | sin | cos | sin | cos | sin | cos | sin | cos | sin | |
| ′ | 74° | | 73° | | 72° | | 71° | | 70° | | ′ |

| ′ | 20° sin | cos | 21° sin | cos | 22° sin | cos | 23° sin | cos | 24° sin | cos | ′ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 3420 | 9397 | 3584 | 9336 | 3746 | 9272 | 3907 | 9205 | 4067 | 9135 | 60 |
| 1 | 3423 | 9396 | 3586 | 9335 | 3749 | 9271 | 3910 | 9204 | 4070 | 9134 | 59 |
| 2 | 3426 | 9395 | 3589 | 9334 | 3751 | 9270 | 3913 | 9203 | 4073 | 9133 | 58 |
| 3 | 3428 | 9394 | 3592 | 9333 | 3754 | 9269 | 3915 | 9202 | 4075 | 9132 | 57 |
| 4 | 3431 | 9393 | 3595 | 9332 | 3757 | 9267 | 3918 | 9200 | 4078 | 9131 | 56 |
| 5 | 3434 | 9392 | 3597 | 9331 | 3760 | 9266 | 3921 | 9199 | 4081 | 9130 | 55 |
| 6 | 3437 | 9391 | 3600 | 9330 | 3762 | 9265 | 3923 | 9198 | 4083 | 9128 | 54 |
| 7 | 3439 | 9390 | 3603 | 9328 | 3765 | 9264 | 3926 | 9197 | 4086 | 9127 | 53 |
| 8 | 3442 | 9389 | 3605 | 9327 | 3768 | 9263 | 3929 | 9196 | 4089 | 9126 | 52 |
| 9 | 3445 | 9388 | 3608 | 9326 | 3770 | 9262 | 3931 | 9195 | 4091 | 9125 | 51 |
| 10 | 3448 | 9387 | 3611 | 9325 | 3773 | 9261 | 3934 | 9194 | 4094 | 9124 | 50 |
| 11 | 3450 | 9386 | 3614 | 9324 | 3776 | 9260 | 3937 | 9192 | 4097 | 9122 | 49 |
| 12 | 3453 | 9385 | 3616 | 9323 | 3778 | 9259 | 3939 | 9191 | 4099 | 9121 | 48 |
| 13 | 3456 | 9384 | 3619 | 9322 | 3781 | 9258 | 3942 | 9190 | 4102 | 9120 | 47 |
| 14 | 3458 | 9383 | 3622 | 9321 | 3784 | 9257 | 3945 | 9189 | 4105 | 9119 | 46 |
| 15 | 3461 | 9382 | 3624 | 9320 | 3786 | 9255 | 3947 | 9188 | 4107 | 9118 | 45 |
| 16 | 3464 | 9381 | 3627 | 9319 | 3789 | 9254 | 3950 | 9187 | 4110 | 9116 | 44 |
| 17 | 3467 | 9380 | 3630 | 9318 | 3792 | 9253 | 3953 | 9186 | 4112 | 9115 | 43 |
| 18 | 3469 | 9379 | 3633 | 9317 | 3795 | 9252 | 3955 | 9184 | 4115 | 9114 | 42 |
| 19 | 3472 | 9378 | 3635 | 9316 | 3797 | 9251 | 3958 | 9183 | 4118 | 9113 | 41 |
| 20 | 3475 | 9377 | 3638 | 9315 | 3800 | 9250 | 3961 | 9182 | 4120 | 9112 | 40 |
| 21 | 3478 | 9376 | 3641 | 9314 | 3803 | 9249 | 3963 | 9181 | 4123 | 9110 | 39 |
| 22 | 3480 | 9375 | 3643 | 9313 | 3805 | 9248 | 3966 | 9180 | 4126 | 9109 | 38 |
| 23 | 3483 | 9374 | 3646 | 9312 | 3808 | 9247 | 3969 | 9179 | 4128 | 9108 | 37 |
| 24 | 3486 | 9373 | 3649 | 9311 | 3811 | 9245 | 3971 | 9178 | 4131 | 9107 | 36 |
| 25 | 3488 | 9372 | 3651 | 9309 | 3813 | 9244 | 3974 | 9176 | 4134 | 9106 | 35 |
| 26 | 3491 | 9371 | 3654 | 9308 | 3816 | 9243 | 3977 | 9175 | 4136 | 9104 | 34 |
| 27 | 3494 | 9370 | 3657 | 9307 | 3819 | 9242 | 3979 | 9174 | 4139 | 9103 | 33 |
| 28 | 3497 | 9369 | 3660 | 9306 | 3821 | 9241 | 3982 | 9173 | 4142 | 9102 | 32 |
| 29 | 3499 | 9368 | 3662 | 9305 | 3824 | 9240 | 3985 | 9172 | 4144 | 9101 | 31 |
| 30 | 3502 | 9367 | 3665 | 9304 | 3827 | 9239 | 3987 | 9171 | 4147 | 9100 | 30 |
| 31 | 3505 | 9366 | 3668 | 9303 | 3830 | 9238 | 3990 | 9169 | 4150 | 9098 | 29 |
| 32 | 3508 | 9365 | 3670 | 9302 | 3832 | 9237 | 3993 | 9168 | 4152 | 9097 | 28 |
| 33 | 3510 | 9364 | 3673 | 9301 | 3835 | 9235 | 3995 | 9167 | 4155 | 9096 | 27 |
| 34 | 3513 | 9363 | 3676 | 9300 | 3838 | 9234 | 3998 | 9166 | 4158 | 9095 | 26 |
| 35 | 3516 | 9362 | 3679 | 9299 | 3840 | 9233 | 4001 | 9165 | 4160 | 9094 | 25 |
| 36 | 3518 | 9361 | 3681 | 9298 | 3843 | 9232 | 4003 | 9164 | 4163 | 9092 | 24 |
| 37 | 3521 | 9360 | 3684 | 9297 | 3846 | 9231 | 4006 | 9162 | 4165 | 9091 | 23 |
| 38 | 3524 | 9359 | 3687 | 9296 | 3848 | 9230 | 4009 | 9161 | 4168 | 9090 | 22 |
| 39 | 3527 | 9358 | 3689 | 9295 | 3851 | 9229 | 4011 | 9160 | 4171 | 9088 | 21 |
| 40 | 3529 | 9356 | 3692 | 9293 | 3854 | 9228 | 4014 | 9159 | 4173 | 9088 | 20 |
| 41 | 3532 | 9355 | 3695 | 9292 | 3856 | 9227 | 4017 | 9158 | 4176 | 9086 | 19 |
| 42 | 3535 | 9354 | 3697 | 9291 | 3859 | 9225 | 4019 | 9157 | 4179 | 9085 | 18 |
| 43 | 3537 | 9353 | 3700 | 9290 | 3862 | 9224 | 4022 | 9155 | 4181 | 9084 | 17 |
| 44 | 3540 | 9352 | 3703 | 9289 | 3864 | 9223 | 4025 | 9154 | 4184 | 9083 | 16 |
| 45 | 3543 | 9351 | 3706 | 9288 | 3867 | 9222 | 4027 | 9153 | 4187 | 9081 | 15 |
| 46 | 3546 | 9350 | 3708 | 9287 | 3870 | 9221 | 4030 | 9152 | 4189 | 9080 | 14 |
| 47 | 3548 | 9349 | 3711 | 9286 | 3872 | 9220 | 4033 | 9151 | 4192 | 9079 | 13 |
| 48 | 3551 | 9348 | 3714 | 9285 | 3875 | 9219 | 4035 | 9150 | 4195 | 9078 | 12 |
| 49 | 3554 | 9347 | 3716 | 9284 | 3878 | 9218 | 4038 | 9148 | 4197 | 9077 | 11 |
| 50 | 3557 | 9346 | 3719 | 9283 | 3881 | 9216 | 4041 | 9147 | 4200 | 9075 | 10 |
| 51 | 3559 | 9345 | 3722 | 9282 | 3883 | 9215 | 4043 | 9146 | 4202 | 9074 | 9 |
| 52 | 3562 | 9344 | 3724 | 9281 | 3886 | 9214 | 4046 | 9145 | 4205 | 9073 | 8 |
| 53 | 3565 | 9343 | 3727 | 9279 | 3889 | 9213 | 4049 | 9144 | 4208 | 9072 | 7 |
| 54 | 3567 | 9342 | 3730 | 9278 | 3891 | 9212 | 4051 | 9143 | 4210 | 9070 | 6 |
| 55 | 3570 | 9341 | 3733 | 9277 | 3894 | 9211 | 4054 | 9141 | 4213 | 9069 | 5 |
| 56 | 3573 | 9340 | 3735 | 9276 | 3897 | 9210 | 4057 | 9140 | 4216 | 9068 | 4 |
| 57 | 3576 | 9339 | 3738 | 9275 | 3899 | 9208 | 4059 | 9139 | 4218 | 9067 | 3 |
| 58 | 3578 | 9338 | 3741 | 9274 | 3902 | 9207 | 4062 | 9138 | 4221 | 9066 | 2 |
| 59 | 3581 | 9337 | 3743 | 9273 | 3905 | 9206 | 4065 | 9137 | 4224 | 9064 | 1 |
| 60 | 3584 | 9336 | 3746 | 9272 | 3907 | 9205 | 4067 | 9135 | 4226 | 9063 | 0 |
| | cos | sin | cos | sin | cos | sin | cos | sin | cos | sin | |
| ′ | 69° | | 68° | | 67° | | 66° | | 65° | | ′ |

| ′ | 25° | | 26° | | 27° | | 28° | | 29° | | ′ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | sin | cos | sin | cos | sin | cos | sin | cos | sin | cos | |
| 0 | 4226 | 9063 | 4384 | 8988 | 4540 | 8910 | 4695 | 8829 | 4848 | 8746 | 60 |
| 1 | 4229 | 9062 | 4386 | 8987 | 4542 | 8909 | 4697 | 8828 | 4851 | 8745 | 59 |
| 2 | 4231 | 9061 | 4389 | 8985 | 4545 | 8907 | 4700 | 8827 | 4853 | 8743 | 58 |
| 3 | 4234 | 9059 | 4392 | 8984 | 4548 | 8906 | 4702 | 8825 | 4856 | 8742 | 57 |
| 4 | 4237 | 9058 | 4394 | 8983 | 4550 | 8905 | 4705 | 8824 | 4858 | 8741 | 56 |
| 5 | 4239 | 9057 | 4397 | 8982 | 4553 | 8903 | 4708 | 8823 | 4861 | 8739 | 55 |
| 6 | 4242 | 9056 | 4399 | 8980 | 4555 | 8902 | 4710 | 8821 | 4863 | 8738 | 54 |
| 7 | 4245 | 9054 | 4402 | 8979 | 4558 | 8901 | 4713 | 8820 | 4866 | 8736 | 53 |
| 8 | 4247 | 9053 | 4405 | 8978 | 4561 | 8899 | 4715 | 8819 | 4868 | 8735 | 52 |
| 9 | 4250 | 9052 | 4407 | 8976 | 4563 | 8898 | 4718 | 8817 | 4871 | 8733 | 51 |
| 10 | 4253 | 9051 | 4410 | 8975 | 4566 | 8897 | 4720 | 8816 | 4874 | 8732 | 50 |
| 11 | 4255 | 9050 | 4412 | 8974 | 4568 | 8895 | 4723 | 8814 | 4876 | 8731 | 49 |
| 12 | 4258 | 9048 | 4415 | 8973 | 4571 | 8894 | 4726 | 8813 | 4879 | 8729 | 48 |
| 13 | 4260 | 9047 | 4418 | 8971 | 4574 | 8893 | 4728 | 8812 | 4881 | 8728 | 47 |
| 14 | 4263 | 9046 | 4420 | 8970 | 4576 | 8892 | 4731 | 8810 | 4884 | 8726 | 46 |
| 15 | 4266 | 9045 | 4423 | 8969 | 4579 | 8890 | 4733 | 8809 | 4886 | 8725 | 45 |
| 16 | 4268 | 9043 | 4425 | 8967 | 4581 | 8889 | 4736 | 8808 | 4889 | 8724 | 44 |
| 17 | 4271 | 9042 | 4428 | 8966 | 4584 | 8888 | 4738 | 8806 | 4891 | 8722 | 43 |
| 18 | 4274 | 9041 | 4431 | 8965 | 4586 | 8886 | 4741 | 8805 | 4894 | 8721 | 42 |
| 19 | 4276 | 9040 | 4433 | 8964 | 4589 | 8885 | 4743 | 8803 | 4896 | 8719 | 41 |
| 20 | 4279 | 9038 | 4436 | 8962 | 4592 | 8884 | 4746 | 8802 | 4899 | 8718 | 40 |
| 21 | 4281 | 9037 | 4439 | 8961 | 4594 | 8882 | 4749 | 8801 | 4901 | 8716 | 39 |
| 22 | 4284 | 9036 | 4441 | 8960 | 4597 | 8881 | 4751 | 8799 | 4904 | 8715 | 38 |
| 23 | 4287 | 9035 | 4444 | 8958 | 4599 | 8879 | 4754 | 8798 | 4907 | 8714 | 37 |
| 24 | 4289 | 9033 | 4446 | 8957 | 4602 | 8878 | 4756 | 8796 | 4909 | 8712 | 36 |
| 25 | 4292 | 9032 | 4449 | 8956 | 4605 | 8877 | 4759 | 8795 | 4912 | 8711 | 35 |
| 26 | 4295 | 9031 | 4452 | 8955 | 4607 | 8875 | 4761 | 8794 | 4914 | 8709 | 34 |
| 27 | 4297 | 9030 | 4454 | 8953 | 4610 | 8874 | 4764 | 8792 | 4917 | 8708 | 33 |
| 28 | 4300 | 9028 | 4457 | 8952 | 4612 | 8873 | 4766 | 8791 | 4919 | 8706 | 32 |
| 29 | 4302 | 9027 | 4459 | 8951 | 4615 | 8871 | 4769 | 8790 | 4922 | 8705 | 31 |
| 30 | 4305 | 9026 | 4462 | 8949 | 4617 | 8870 | 4772 | 8788 | 4924 | 8704 | 30 |
| 31 | 4308 | 9025 | 4465 | 8948 | 4620 | 8869 | 4774 | 8787 | 4927 | 8702 | 29 |
| 32 | 4310 | 9023 | 4467 | 8947 | 4623 | 8867 | 4777 | 8785 | 4929 | 8701 | 28 |
| 33 | 4313 | 9022 | 4470 | 8945 | 4625 | 8866 | 4779 | 8784 | 4932 | 8699 | 27 |
| 34 | 4316 | 9021 | 4472 | 8944 | 4628 | 8865 | 4782 | 8783 | 4934 | 8698 | 26 |
| 35 | 4318 | 9020 | 4475 | 8943 | 4630 | 8863 | 4784 | 8781 | 4937 | 8696 | 25 |
| 36 | 4321 | 9018 | 4478 | 8942 | 4633 | 8862 | 4787 | 8780 | 4939 | 8695 | 24 |
| 37 | 4323 | 9017 | 4480 | 8940 | 4636 | 8861 | 4789 | 8778 | 4942 | 8694 | 23 |
| 38 | 4326 | 9016 | 4483 | 8939 | 4638 | 8859 | 4792 | 8777 | 4944 | 8692 | 22 |
| 39 | 4329 | 9015 | 4485 | 8938 | 4641 | 8858 | 4795 | 8776 | 4947 | 8691 | 21 |
| 40 | 4331 | 9013 | 4488 | 8936 | 4643 | 8857 | 4797 | 8774 | 4950 | 8689 | 20 |
| 41 | 4334 | 9012 | 4491 | 8935 | 4646 | 8855 | 4800 | 8773 | 4952 | 8688 | 19 |
| 42 | 4337 | 9011 | 4493 | 8934 | 4648 | 8854 | 4802 | 8771 | 4955 | 8686 | 18 |
| 43 | 4339 | 9010 | 4496 | 8932 | 4651 | 8853 | 4805 | 8770 | 4957 | 8685 | 17 |
| 44 | 4342 | 9008 | 4498 | 8931 | 4654 | 8851 | 4807 | 8769 | 4960 | 8683 | 16 |
| 45 | 4344 | 9007 | 4501 | 8930 | 4656 | 8850 | 4810 | 8767 | 4962 | 8682 | 15 |
| 46 | 4347 | 9006 | 4504 | 8928 | 4659 | 8849 | 4812 | 8766 | 4965 | 8681 | 14 |
| 47 | 4350 | 9004 | 4506 | 8927 | 4661 | 8847 | 4815 | 8764 | 4967 | 8679 | 13 |
| 48 | 4352 | 9003 | 4509 | 8926 | 4664 | 8846 | 4818 | 8763 | 4970 | 8678 | 12 |
| 49 | 4355 | 9002 | 4511 | 8925 | 4666 | 8844 | 4820 | 8762 | 4972 | 8676 | 11 |
| 50 | 4358 | 9001 | 4514 | 8923 | 4669 | 8843 | 4823 | 8760 | 4975 | 8675 | 10 |
| 51 | 4360 | 8999 | 4517 | 8922 | 4672 | 8842 | 4825 | 8759 | 4977 | 8673 | 9 |
| 52 | 4363 | 8998 | 4519 | 8921 | 4674 | 8840 | 4828 | 8757 | 4980 | 8672 | 8 |
| 53 | 4365 | 8997 | 4522 | 8919 | 4677 | 8839 | 4830 | 8756 | 4982 | 8670 | 7 |
| 54 | 4368 | 8996 | 4524 | 8918 | 4679 | 8838 | 4833 | 8755 | 4985 | 8669 | 6 |
| 55 | 4371 | 8994 | 4527 | 8917 | 4682 | 8836 | 4835 | 8753 | 4987 | 8668 | 5 |
| 56 | 4373 | 8993 | 4530 | 8915 | 4684 | 8835 | 4838 | 8752 | 4990 | 8666 | 4 |
| 57 | 4376 | 8992 | 4532 | 8914 | 4687 | 8834 | 4840 | 8750 | 4992 | 8665 | 3 |
| 58 | 4378 | 8990 | 4535 | 8913 | 4690 | 8832 | 4843 | 8749 | 4995 | 8663 | 2 |
| 59 | 4381 | 8989 | 4537 | 8911 | 4692 | 8831 | 4846 | 8748 | 4997 | 8662 | 1 |
| 60 | 4384 | 8988 | 4540 | 8910 | 4695 | 8829 | 4848 | 8746 | 5000 | 8660 | 0 |
| | cos | sin | cos | sin | cos | sin | cos | sin | cos | sin | |
| ′ | 64° | | 63° | | 62° | | 61° | | 60° | | ′ |

| ′ | 30° sin | cos | 31° sin | cos | 32° sin | cos | 33° sin | cos | 34° sin | cos | ′ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **0** | 5000 | 8660 | 5150 | 8572 | 5299 | 8480 | 5446 | 8387 | 5592 | 8290 | **60** |
| 1 | 5003 | 8659 | 5153 | 8570 | 5302 | 8479 | 5449 | 8385 | 5594 | 8289 | 59 |
| 2 | 5005 | 8657 | 5155 | 8569 | 5304 | 8477 | 5451 | 8384 | 5597 | 8287 | 58 |
| 3 | 5008 | 8656 | 5158 | 8567 | 5307 | 8476 | 5454 | 8382 | 5599 | 8285 | 57 |
| 4 | 5010 | 8654 | 5160 | 8566 | 5309 | 8474 | 5456 | 8380 | 5602 | 8284 | 56 |
| 5 | 5013 | 8653 | 5163 | 8564 | 5312 | 8473 | 5459 | 8379 | 5604 | 8282 | 55 |
| 6 | 5015 | 8652 | 5165 | 8563 | 5314 | 8471 | 5461 | 8377 | 5606 | 8281 | 54 |
| 7 | 5018 | 8650 | 5168 | 8561 | 5316 | 8470 | 5463 | 8376 | 5609 | 8279 | 53 |
| 8 | 5020 | 8649 | 5170 | 8560 | 5319 | 8468 | 5466 | 8374 | 5611 | 8277 | 52 |
| 9 | 5023 | 8647 | 5173 | 8558 | 5321 | 8467 | 5468 | 8372 | 5614 | 8276 | 51 |
| **10** | 5025 | 8646 | 5175 | 8557 | 5324 | 8465 | 5471 | 8371 | 5616 | 8274 | **50** |
| 11 | 5028 | 8644 | 5178 | 8555 | 5326 | 8463 | 5473 | 8369 | 5618 | 8272 | 49 |
| ·12 | 5030 | 8643 | 5180 | 8554 | 5329 | 8462 | 5476 | 8368 | 5621 | 8271 | 48 |
| 13 | 5033 | 8641 | 5183 | 8552 | 5331 | 8460 | 5478 | 8366 | 5623 | 8269 | 47 |
| 14 | 5035 | 8640 | 5185 | 8551 | 5334 | 8459 | 5480 | 8364 | 5626 | 8268 | 46 |
| 15 | 5038 | 8638 | 5188 | 8549 | 5336 | 8457 | 5483 | 8363 | 5628 | 8266 | 45 |
| 16 | 5040 | 8637 | 5190 | 8548 | 5339 | 8456 | 5485 | 8361 | 5630 | 8264 | 44 |
| 17 | 5043 | 8635 | 5193 | 8546 | 5341 | 8454 | 5488 | 8360 | 5633 | 8263 | 43 |
| 18 | 5045 | 8634 | 5195 | 8545 | 5344 | 8453 | 5490 | 8358 | 5635 | 8261 | 42 |
| 19 | 5048 | 8632 | 5198 | 8543 | 5346 | 8451 | 5493 | 835ſ | 5638 | 8259 | 41 |
| **20** | 5050 | 8631 | 5200 | 8542 | 5348 | 8450 | 5495 | 8355 | 5640 | 8258 | **40** |
| 21 | 5053 | 8630 | 5203 | 8540 | 5351 | 8448 | 5498 | 8353 | 5642 | 8256 | 39 |
| 22 | 5055 | 8628 | 5205 | 8539 | 5353 | 8446 | 5500 | 8352 | 5645 | 8254 | 38 |
| 23 | 5058 | 8627 | 5208 | 8537 | 5356 | 8445 | 5502 | 8350 | 5647 | 8253 | 37 |
| 24 | 5060 | 8625 | 5210 | 8536 | 5358 | 8443 | 5505 | 8348 | 5650 | 8251 | 36 |
| 25 | 5063 | 8624 | 5213 | 8534 | 5361 | 8442 | 5507 | 8347 | 5652 | 8249 | 35 |
| 26 | 5065 | 8622 | 5215 | 8532 | 5363 | 8440 | 5510 | 8345 | 5654 | 8248 | 34 |
| 27 | 5068 | 8621 | 5218 | 8531 | 5366 | 8439 | 5512 | 8344 | 5657 | 8246 | 33 |
| 28 | 5070 | 8619 | 5220 | 8529 | 5368 | 8437 | 5515 | 8342 | 5659 | 8245 | 32 |
| 29 | 5073 | 8618 | 5223 | 8528 | 5371 | 8435 | 5517 | 8340 | 5662 | 8243 | 31 |
| **30** | 5075 | 8616 | 5225 | 8526 | 5373 | 8434 | 5519 | 8339 | 5664 | 8241 | **30** |
| 31 | 5078 | 8615 | 5227 | 8525 | 5375 | 8432 | 5522 | 8337 | 5666 | 8240 | 29 |
| 32 | 5080 | 8613 | 5230 | 8523 | 5378 | 8431 | 5524 | 8336 | 5669 | 8238 | 28 |
| 33 | 5083 | 8612 | 5232 | 8522 | 5380 | 8429 | 5527 | 8334 | 5671 | 8236 | 27 |
| 34 | 5085 | 8610 | 5235 | 8520 | 5383 | 8428 | 5529 | 8332 | 5674 | 8235 | 26 |
| 35 | 5088 | 8609 | 5237 | 8519 | 5385 | 8426 | 5531 | 8331 | 5676 | 8233 | 25 |
| 36 | 5090 | 8607 | 5240 | 8517 | 5388 | 8425 | 5534 | 8329 | 5678 | 8231 | 24 |
| 37 | 5093 | 8606 | 5242 | 8516 | 5390 | 8423 | 5536 | 8328 | 5681 | 8230 | 23 |
| 38 | 5095 | 8604 | 5245 | 8514 | 5393 | 8421 | 5539 | 8326 | 5683 | 8228 | 22 |
| 39 | 5098 | 8603 | 5247 | 8513 | 5395 | 8420 | 5541 | 8324 | 5686 | 8226 | 21 |
| **40** | 5100 | 8601 | 5250 | 8511 | 5398 | 8418 | 5544 | 8323 | 5688 | 8225 | **20** |
| 41 | 5103 | 8600 | 5252 | 8510 | 5400 | 8417 | 5546 | 8321 | 5690 | 8223 | 19 |
| 42 | 5105 | 8599 | 5255 | 8508 | 5402 | 8415 | 5548 | 8320 | 5693 | 8221 | 18 |
| 43 | 5108 | 8597 | 5257 | 8507 | 5405 | 8414 | 5551 | 8318 | 5695 | 8220 | 17 |
| 44 | 5110 | 8596 | 5260 | 8505 | 5407 | 8412 | 5553 | 8316 | 5698 | 8218 | 16 |
| 45 | 5113 | 8594 | 5262 | 8504 | 5410 | 8410 | 5556 | 8315 | 5700 | 8216 | 15 |
| 46 | 5115 | 8593 | 5265 | 8502 | 5412 | 8409 | 5558 | 8313 | 5702 | 8215 | 14 |
| 47 | 5118 | 8591 | 5267 | 8500 | 5415 | 8407 | 5561 | 8311 | 5705 | 8213 | 13 |
| 48 | 5120 | 8590 | 5270 | 8499 | 5417 | 8406 | 5563 | 8310 | 5707 | 8211 | 12 |
| 49 | 5123 | 8588 | 5272 | 8497 | 5420 | 8404 | 5565 | 8308 | 5710 | 8210 | 11 |
| **50** | 5125 | 8587 | 5275 | 8496 | 5422 | 8403 | 5568 | 8307 | 5712 | 8208 | **10** |
| 51 | 5128 | 8585 | 5277 | 8494 | 5424 | 8401 | 5570 | 8305 | 5714 | 8207 | 9 |
| 52 | 5130 | 8584 | 5279 | 8493 | 5427 | 8399 | 5573 | 8303 | 5717 | 8205 | 8 |
| 53 | 5133 | 8582 | 5282 | 8491 | 5429 | 8398 | 5575 | 8302 | 5719 | 8203 | 7 |
| 54 | 5135 | 8581 | 5284 | 8490 | 5432 | 8396 | 5577 | 8300 | 5721 | 8202 | 6 |
| 55 | 5138 | 8579 | 5287 | 8488 | 5434 | 8395 | 5580 | 8299 | 5724 | 8200 | 5 |
| 56 | 5140 | 8578 | 5289 | 8487 | 5437 | 8393 | 5582 | 8297 | 5726 | 8198 | 4 |
| 57 | 5143 | 8576 | 5292 | 8485 | 5439 | 8391 | 5585 | 8295 | 5729 | 8197 | 3 |
| 58 | 5145 | 8575 | 5294 | 8484 | 5442 | 8390 | 5587 | 8294 | 5731 | 8195 | 2 |
| 59 | 5148 | 8573 | 5297 | 8482 | 5444 | 8388 | 5590 | 8292 | 5733 | 8193 | 1 |
| **60** | 5150 | 8572 | 5299 | 8480 | 5446 | 8387 | 5592 | 8290 | 5736 | 8192 | **0** |
| | cos | sin | cos | sin | cos | sin | cos | sin | cos | sin | |
| ′ | 59° | | 58° | | 57° | | 56° | | 55° | | ′ |

| ′ | 35° sin | cos | 36° sin | cos | 37° sin | cos | 38° sin | cos | 39° sin | cos | ′ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 5736 | 8192 | 5878 | 8090 | 6018 | 7986 | 6157 | 7880 | 6293 | 7771 | 60 |
| 1 | 5738 | 8190 | 5880 | 8088 | 6020 | 7985 | 6159 | 7878 | 6295 | 7770 | 59 |
| 2 | 5741 | 8188 | 5883 | 8087 | 6023 | 7983 | 6161 | 7877 | 6298 | 7768 | 58 |
| 3 | 5743 | 8187 | 5885 | 8085 | 6025 | 7981 | 6163 | 7875 | 6300 | 7766 | 57 |
| 4 | 5745 | 8185 | 5887 | 8083 | 6027 | 7979 | 6166 | 7873 | 6302 | 7764 | 56 |
| 5 | 5748 | 8183 | 5890 | 8082 | 6030 | 7978 | 6168 | 7871 | 6305 | 7762 | 55 |
| 6 | 5750 | 8181 | 5892 | 8080 | 6032 | 7976 | 6170 | 7869 | 6307 | 7760 | 54 |
| 7 | 5752 | 8180 | 5894 | 8078 | 6034 | 7974 | 6173 | 7868 | 6309 | 7759 | 53 |
| 8 | 5755 | 8178 | 5897 | 8076 | 6037 | 7972 | 6175 | 7866 | 6311 | 7757 | 52 |
| 9 | 5757 | 8176 | 5899 | 8075 | 6039 | 7971 | 6177 | 7864 | 6314 | 7755 | 51 |
| 10 | 5760 | 8175 | 5901 | 8073 | 6041 | 7969 | 6180 | 7862 | 6316 | 7753 | 50 |
| 11 | 5762 | 8173 | 5904 | 8071 | 6044 | 7967 | 6182 | 7860 | 6318 | 7751 | 49 |
| 12 | 5764 | 8171 | 5906 | 8070 | 6046 | 7965 | 6184 | 7859 | 6320 | 7749 | 48 |
| 13 | 5767 | 8170 | 5908 | 8068 | 6048 | 7964 | 6186 | 7857 | 6323 | 7748 | 47 |
| 14 | 5769 | 8168 | 5911 | 8066 | 6051 | 7962 | 6189 | 7855 | 6325 | 7746 | 46 |
| 15 | 5771 | 8166 | 5913 | 8064 | 6053 | 7960 | 6191 | 7853 | 6327 | 7744 | 45 |
| 16 | 5774 | 8165 | 5915 | 8063 | 6055 | 7958 | 6193 | 7851 | 6329 | 7742 | 44 |
| 17 | 5776 | 8163 | 5918 | 8061 | 6058 | 7956 | 6196 | 7850 | 6332 | 7740 | 43 |
| 18 | 5779 | 8161 | 5920 | 8059 | 6060 | 7955 | 6198 | 7848 | 6334 | 7738 | 42 |
| 19 | 5781 | 8160 | 5922 | 8058 | 6062 | 7953 | 6200 | 7846 | 6336 | 7737 | 41 |
| 20 | 5783 | 8158 | 5925 | 8056 | 6065 | 7951 | 6202 | 7844 | 6338 | 7735 | 40 |
| 21 | 5786 | 8156 | 5927 | 8054 | 6067 | 7950 | 6205 | 7842 | 6341 | 7733 | 39 |
| 22 | 5788 | 8155 | 5930 | 8052 | 6069 | 7948 | 6207 | 7841 | 6343 | 7731 | 38 |
| 23 | 5790 | 8153 | 5932 | 8051 | 6071 | 7946 | 6209 | 7839 | 6345 | 7729 | 37 |
| 24 | 5793 | 8151 | 5934 | 8049 | 6074 | 7944 | 6211 | 7837 | 6347 | 7727 | 36 |
| 25 | 5795 | 8150 | 5937 | 8047 | 6076 | 7942 | 6214 | 7835 | 6350 | 7725 | 35 |
| 26 | 5798 | 8148 | 5939 | 8045 | 6078 | 7941 | 6216 | 7833 | 6352 | 7724 | 34 |
| 27 | 5800 | 8146 | 5941 | 8044 | 6081 | 7939 | 6218 | 7832 | 6354 | 7722 | 33 |
| 28 | 5802 | 8145 | 5944 | 8042 | 6083 | 7937 | 6221 | 7830 | 6356 | 7720 | 32 |
| 29 | 5805 | 8143 | 5946 | 8040 | 6085 | 7935 | 6223 | 7828 | 6359 | 7718 | 31 |
| 30 | 5807 | 8141 | 5948 | 8039 | 6088 | 7934 | 6225 | 7826 | 6361 | 7716 | 30 |
| 31 | 5809 | 8139 | 5951 | 8037 | 6090 | 7932 | 6227 | 7824 | 6363 | 7714 | 29 |
| 32 | 5812 | 8138 | 5953 | 8035 | 6092 | 7930 | 6230 | 7822 | 6365 | 7713 | 28 |
| 33 | 5814 | 8136 | 5955 | 8033 | 6095 | 7928 | 6232 | 7821 | 6368 | 7711 | 27 |
| 34 | 5816 | 8134 | 5958 | 8032 | 6097 | 7926 | 6234 | 7819 | 6370 | 7709 | 26 |
| 35 | 5819 | 8133 | 5960 | 8030 | 6099 | 7925 | 6237 | 7817 | 6372 | 7707 | 25 |
| 36 | 5821 | 8131 | 5962 | 8028 | 6101 | 7923 | 6239 | 7815 | 6374 | 7705 | 24 |
| 37 | 5824 | 8129 | 5965 | 8026 | 6104 | 7921 | 6241 | 7813 | 6376 | 7703 | 23 |
| 38 | 5826 | 8128 | 5967 | 8025 | 6106 | 7919 | 6243 | 7812 | 6379 | 7701 | 22 |
| 39 | 5828 | 8126 | 5969 | 8023 | 6108 | 7918 | 6246 | 7810 | 6381 | 7700 | 21 |
| 40 | 5831 | 8124 | 5972 | 8021 | 6111 | 7916 | 6248 | 7808 | 6383 | 7698 | 20 |
| 41 | 5833 | 8123 | 5974 | 8020 | 6113 | 7914 | 6250 | 7806 | 6385 | 7696 | 19 |
| 42 | 5835 | 8121 | 5976 | 8018 | 6115 | 7912 | 6252 | 7804 | 6388 | 7694 | 18 |
| 43 | 5838 | 8119 | 5979 | 8016 | 6118 | 7910 | 6255 | 7802 | 6390 | 7692 | 17 |
| 44 | 5840 | 8117 | 5981 | 8014 | 6120 | 7909 | 6257 | 7801 | 6392 | 7690 | 16 |
| 45 | 5842 | 8116 | 5983 | 8013 | 6122 | 7907 | 6259 | 7799 | 6394 | 7688 | 15 |
| 46 | 5845 | 8114 | 5986 | 8011 | 6124 | 7905 | 6262 | 7797 | 6397 | 7687 | 14 |
| 47 | 5847 | 8112 | 5988 | 8009 | 6127 | 7903 | 6264 | 7795 | 6399 | 7685 | 13 |
| 48 | 5850 | 8111 | 5990 | 8007 | 6129 | 7902 | 6266 | 7793 | 6401 | 7683 | 12 |
| 49 | 5852 | 8109 | 5993 | 8006 | 6131 | 7900 | 6268 | 7792 | 6403 | 7681 | 11 |
| 50 | 5854 | 8107 | 5995 | 8004 | 6134 | 7898 | 6271 | 7790 | 6406 | 7679 | 10 |
| 51 | 5857 | 8106 | 5997 | 8002 | 6136 | 7896 | 6273 | 7788 | 6408 | 7677 | 9 |
| 52 | 5859 | 8104 | 6000 | 8000 | 6138 | 7894 | 6275 | 7786 | 6410 | 7675 | 8 |
| 53 | 5861 | 8102 | 6002 | 7999 | 6141 | 7893 | 6277 | 7784 | 6412 | 7674 | 7 |
| 54 | 5864 | 8100 | 6004 | 7997 | 6143 | 7891 | 6280 | 7782 | 6414 | 7672 | 6 |
| 55 | 5866 | 8099 | 6007 | 7995 | 6145 | 7889 | 6282 | 7781 | 6417 | 7670 | 5 |
| 56 | 5868 | 8097 | 6009 | 7993 | 6147 | 7887 | 6284 | 7779 | 6419 | 7668 | 4 |
| 57 | 5871 | 8095 | 6011 | 7992 | 6150 | 7885 | 6286 | 7777 | 6421 | 7666 | 3 |
| 58 | 5873 | 8094 | 6014 | 7990 | 6152 | 7884 | 6289 | 7775 | 6423 | 7664 | 2 |
| 59 | 5875 | 8092 | 6016 | 7988 | 6154 | 7882 | 6291 | 7773 | 6426 | 7662 | 1 |
| 60 | 5878 | 8090 | 6018 | 7986 | 6157 | 7880 | 6293 | 7771 | 6428 | 7660 | 0 |
| | cos | sin | cos | sin | cos | sin | cos | sin | cos | sin | |
| ′ | 54° | | 53° | | 52° | | 51° | | 50° | | ′ |

| ′ | 40° sin | 40° cos | 41° sin | 41° cos | 42° sin | 42° cos | 43° sin | 43° cos | 44° sin | 44° cos | ′ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 6428 | 7660 | 6561 | 7547 | 6691 | 7431 | 6820 | 7314 | 6947 | 7193 | 60 |
| 1 | 6430 | 7659 | 6563 | 7545 | 6693 | 7430 | 6822 | 7312 | 6949 | 7191 | 59 |
| 2 | 6432 | 7657 | 6565 | 7543 | 6696 | 7428 | 6824 | 7310 | 6951 | 7189 | 58 |
| 3 | 6435 | 7655 | 6567 | 7541 | 6698 | 7426 | 6826 | 7308 | 6953 | 7187 | 57 |
| 4 | 6437 | 7653 | 6569 | 7539 | 6700 | 7424 | 6828 | 7306 | 6955 | 7185 | 56 |
| 5 | 6439 | 7651 | 6572 | 7538 | 6702 | 7422 | 6831 | 7304 | 6957 | 7183 | 55 |
| 6 | 6441 | 7649 | 6574 | 7536 | 6704 | 7420 | 6833 | 7302 | 6959 | 7181 | 54 |
| 7 | 6443 | 7647 | 6576 | 7534 | 6706 | 7418 | 6835 | 7300 | 6961 | 7179 | 53 |
| 8 | 6446 | 7645 | 6578 | 7532 | 6709 | 7416 | 6837 | 7298 | 6963 | 7177 | 52 |
| 9 | 6448 | 7644 | 6580 | 7530 | 6711 | 7414 | 6839 | 7296 | 6965 | 7175 | 51 |
| 10 | 6450 | 7642 | 6583 | 7528 | 6713 | 7412 | 6841 | 7294 | 6967 | 7173 | 50 |
| 11 | 6452 | 7640 | 6585 | 7526 | 6715 | 7410 | 6843 | 7292 | 6970 | 7171 | 49 |
| 12 | 6455 | 7638 | 6587 | 7524 | 6717 | 7408 | 6845 | 7290 | 6972 | 7169 | 48 |
| 13 | 6457 | 7636 | 6589 | 7522 | 6719 | 7406 | 6848 | 7288 | 6974 | 7167 | 47 |
| 14 | 6459 | 7634 | 6591 | 7520 | 6722 | 7404 | 6850 | 7286 | 6976 | 7165 | 46 |
| 15 | 6461 | 7632 | 6593 | 7518 | 6724 | 7402 | 6852 | 7284 | 6978 | 7163 | 45 |
| 16 | 6463 | 7630 | 6596 | 7516 | 6726 | 7400 | 6854 | 7282 | 6980 | 7161 | 44 |
| 17 | 6466 | 7629 | 6598 | 7515 | 6728 | 7398 | 6856 | 7280 | 6982 | 7159 | 43 |
| 18 | 6468 | 7627 | 6600 | 7513 | 6730 | 7396 | 6858 | 7278 | 6984 | 7157 | 42 |
| 19 | 6470 | 7625 | 6602 | 7511 | 6732 | 7394 | 6860 | 7276 | 6986 | 7155 | 41 |
| 20 | 6472 | 7623 | 6604 | 7509 | 6734 | 7392 | 6862 | 7274 | 6988 | 7153 | 40 |
| 21 | 6475 | 7621 | 6607 | 7507 | 6737 | 7390 | 6865 | 7272 | 6990 | 7151 | 39 |
| 22 | 6477 | 7619 | 6609 | 7505 | 6739 | 7388 | 6867 | 7270 | 6992 | 7149 | 38 |
| 23 | 6479 | 7617 | 6611 | 7503 | 6741 | 7387 | 6869 | 7268 | 6995 | 7147 | 37 |
| 24 | 6481 | 7615 | 6613 | 7501 | 6743 | 7385 | 6871 | 7266 | 6997 | 7145 | 36 |
| 25 | 6483 | 7613 | 6615 | 7499 | 6745 | 7383 | 6873 | 7264 | 6999 | 7143 | 35 |
| 26 | 6486 | 7612 | 6617 | 7497 | 6747 | 7381 | 6875 | 7262 | 7001 | 7141 | 34 |
| 27 | 6488 | 7610 | 6620 | 7495 | 6749 | 7379 | 6877 | 7260 | 7003 | 7139 | 33 |
| 28 | 6490 | 7608 | 6622 | 7493 | 6752 | 7377 | 6879 | 7258 | 7005 | 7137 | 32 |
| 29 | 6492 | 7606 | 6624 | 7491 | 6754 | 7375 | 6881 | 7256 | 7007 | 7135 | 31 |
| 30 | 6494 | 7604 | 6626 | 7490 | 6756 | 7373 | 6884 | 7254 | 7009 | 7133 | 30 |
| 31 | 6497 | 7602 | 6628 | 7488 | 6758 | 7371 | 6886 | 7252 | 7011 | 7130 | 29 |
| 32 | 6499 | 7600 | 6631 | 7486 | 6760 | 7369 | 6888 | 7250 | 7013 | 7128 | 28 |
| 33 | 6501 | 7598 | 6633 | 7484 | 6762 | 7367 | 6890 | 7248 | 7015 | 7126 | 27 |
| 34 | 6503 | 7596 | 6635 | 7482 | 6764 | 7365 | 6892 | 7246 | 7017 | 7124 | 26 |
| 35 | 6506 | 7595 | 6637 | 7480 | 6767 | 7363 | 6894 | 7244 | 7019 | 7122 | 25 |
| 36 | 6508 | 7593 | 6639 | 7478 | 6769 | 7361 | 6896 | 7242 | 7022 | 7120 | 24 |
| 37 | 6510 | 7591 | 6641 | 7476 | 6771 | 7359 | 6898 | 7240 | 7024 | 7118 | 23 |
| 38 | 6512 | 7589 | 6644 | 7474 | 6773 | 7357 | 6900 | 7238 | 7026 | 7116 | 22 |
| 39 | 6514 | 7587 | 6646 | 7472 | 6775 | 7355 | 6903 | 7236 | 7028 | 7114 | 21 |
| 40 | 6517 | 7585 | 6648 | 7470 | 6777 | 7353 | 6905 | 7234 | 7030 | 7112 | 20 |
| 41 | 6519 | 7583 | 6650 | 7468 | 6779 | 7351 | 6907 | 7232 | 7032 | 7110 | 19 |
| 42 | 6521 | 7581 | 6652 | 7466 | 6782 | 7349 | 6909 | 7230 | 7034 | 7108 | 18 |
| 43 | 6523 | 7579 | 6654 | 7464 | 6784 | 7347 | 6911 | 7228 | 7036 | 7106 | 17 |
| 44 | 6525 | 7578 | 6657 | 7463 | 6786 | 7345 | 6913 | 7226 | 7038 | 7104 | 16 |
| 45 | 6528 | 7576 | 6659 | 7461 | 6788 | 7343 | 6915 | 7224 | 7040 | 7102 | 15 |
| 46 | 6530 | 7574 | 6661 | 7459 | 6790 | 7341 | 6917 | 7222 | 7042 | 7100 | 14 |
| 47 | 6532 | 7572 | 6663 | 7457 | 6792 | 7339 | 6919 | 7220 | 7044 | 7098 | 13 |
| 48 | 6534 | 7570 | 6665 | 7455 | 6794 | 7337 | 6921 | 7218 | 7046 | 7096 | 12 |
| 49 | 6536 | 7568 | 6667 | 7453 | 6797 | 7335 | 6924 | 7216 | 7048 | 7094 | 11 |
| 50 | 6539 | 7566 | 6670 | 7451 | 6799 | 7333 | 6926 | 7214 | 7050 | 7092 | 10 |
| 51 | 6541 | 7564 | 6672 | 7449 | 6801 | 7331 | 6928 | 7212 | 7053 | 7090 | 9 |
| 52 | 6543 | 7562 | 6674 | 7447 | 6803 | 7329 | 6930 | 7210 | 7055 | 7088 | 8 |
| 53 | 6545 | 7560 | 6676 | 7445 | 6805 | 7327 | 6932 | 7208 | 7057 | 7085 | 7 |
| 54 | 6547 | 7559 | 6678 | 7443 | 6807 | 7325 | 6934 | 7206 | 7059 | 7083 | 6 |
| 55 | 6550 | 7557 | 6680 | 7441 | 6809 | 7323 | 6936 | 7203 | 7061 | 7081 | 5 |
| 56 | 6552 | 7555 | 6683 | 7439 | 6811 | 7321 | 6938 | 7201 | 7063 | 7079 | 4 |
| 57 | 6554 | 7553 | 6685 | 7437 | 6814 | 7319 | 6940 | 7199 | 7065 | 7077 | 3 |
| 58 | 6556 | 7551 | 6687 | 7435 | 6816 | 7318 | 6942 | 7197 | 7067 | 7075 | 2 |
| 59 | 6558 | 7549 | 6689 | 7433 | 6818 | 7316 | 6944 | 7195 | 7069 | 7073 | 1 |
| 60 | 6561 | 7547 | 6691 | 7431 | 6820 | 7314 | 6947 | 7193 | 7071 | 7071 | 0 |
| | cos | sin | cos | sin | cos | sin | cos | sin | cos | sin | |
| ′ | 49° | | 48° | | 47° | | 46° | | 45° | | ′ |

| ′ | 0° tan | 0° cot | 1° tan | 1° cot | 2° tan | 2° cot | 3° tan | 3° cot | 4° tan | 4° cot | ′ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0000 | Infinite | 0175 | 57.2900 | 0349 | 28.6363 | 0524 | 19.0811 | 0699 | 14.3007 | 60 |
| 1 | 0003 | 3437.75 | 0177 | 56.3506 | 0352 | 28.3994 | 0527 | 18.9755 | 0702 | 14.2411 | 59 |
| 2 | 0006 | 1718.87 | 0180 | 55.4415 | 0355 | 28.1664 | 0530 | 18.8711 | 0705 | 14.1821 | 58 |
| 3 | 0009 | 1145.92 | 0183 | 54.5613 | 0358 | 27.9372 | 0533 | 18.7678 | 0708 | 14.1235 | 57 |
| 4 | 0012 | 859.436 | 0186 | 53.7086 | 0361 | 27.7117 | 0536 | 18.6656 | 0711 | 14.0655 | 56 |
| 5 | 0015 | 687.549 | 0189 | 52.8821 | 0364 | 27.4899 | 0539 | 18.5645 | 0714 | 14.0079 | 55 |
| 6 | 0017 | 572.957 | 0192 | 52.0807 | 0367 | 27.2715 | 0542 | 18.4645 | 0717 | 13.9507 | 54 |
| 7 | 0020 | 491.106 | 0195 | 51.3032 | 0370 | 27.0566 | 0544 | 18.3655 | 0720 | 13.8940 | 53 |
| 8 | 0023 | 429.718 | 0198 | 50.5485 | 0373 | 26.8450 | 0547 | 18.2677 | 0723 | 13.8378 | 52 |
| 9 | 0026 | 381.971 | 0201 | 49.8157 | 0375 | 26.6367 | 0550 | 18.1708 | 0726 | 13.7821 | 51 |
| 10 | 0029 | 343.774 | 0204 | 49.1039 | 0378 | 26.4316 | 0553 | 18.0750 | 0729 | 13.7267 | 50 |
| 11 | 0032 | 312.521 | 0207 | 48.4121 | 0381 | 26.2296 | 0556 | 17.9802 | 0731 | 13.6719 | 49 |
| 12 | 0035 | 286.478 | 0209 | 47.7395 | 0384 | 26.0307 | 0559 | 17.8863 | 0734 | 13.6174 | 48 |
| 13 | 0038 | 264.441 | 0212 | 47.0853 | 0387 | 25.8348 | 0562 | 17.7934 | 0737 | 13.5634 | 47 |
| 14 | 0041 | 245.552 | 0215 | 46.4489 | 0390 | 25.6418 | 0565 | 17.7015 | 0740 | 13.5098 | 46 |
| 15 | 0044 | 229.182 | 0218 | 45.8294 | 0393 | 25.4517 | 0568 | 17.6106 | 0743 | 13.4566 | 45 |
| 16 | 0047 | 214.858 | 0221 | 45.2261 | 0396 | 25.2644 | 0571 | 17.5205 | 0746 | 13.4039 | 44 |
| 17 | 0049 | 202.219 | 0224 | 44.6386 | 0399 | 25.0798 | 0574 | 17.4314 | 0749 | 13.3515 | 43 |
| 18 | 0052 | 190.984 | 0227 | 44.0661 | 0402 | 24.8978 | 0577 | 17.3432 | 0752 | 13.2996 | 42 |
| 19 | 0055 | 180.932 | 0230 | 43.5081 | 0405 | 24.7185 | 0580 | 17.2558 | 0755 | 13.2480 | 41 |
| 20 | 0058 | 171.885 | 0233 | 42.9641 | 0407 | 24.5418 | 0582 | 17.1693 | 0758 | 13.1969 | 40 |
| 21 | 0061 | 163.700 | 0236 | 42.4335 | 0410 | 24.3675 | 0585 | 17.0837 | 0761 | 13.1461 | 39 |
| 22 | 0064 | 156.259 | 0239 | 41.9158 | 0413 | 24.1957 | 0588 | 16.9990 | 0764 | 13.0958 | 38 |
| 23 | 0067 | 149.465 | 0241 | 41.4106 | 0416 | 24.0263 | 0591 | 16.9150 | 0767 | 13.0458 | 37 |
| 24 | 0070 | 143.237 | 0244 | 40.9174 | 0419 | 23.8593 | 0594 | 16.8319 | 0769 | 12.9962 | 36 |
| 25 | 0073 | 137.507 | 0247 | 40.4358 | 0422 | 23.6945 | 0597 | 16.7496 | 0772 | 12.9469 | 35 |
| 26 | 0076 | 132.219 | 0250 | 39.9655 | 0425 | 23.5321 | 0600 | 16.6681 | 0775 | 12.8981 | 34 |
| 27 | 0079 | 127.321 | 0253 | 39.5059 | 0428 | 23.3718 | 0603 | 16.5874 | 0778 | 12.8496 | 33 |
| 28 | 0081 | 122.774 | 0256 | 39.0568 | 0431 | 23.2137 | 0606 | 16.5075 | 0781 | 12.8014 | 32 |
| 29 | 0084 | 118.540 | 0259 | 38.6177 | 0434 | 23.0577 | 0609 | 16.4283 | 0784 | 12.7536 | 31 |
| 30 | 0087 | 114.589 | 0262 | 38.1885 | 0437 | 22.9038 | 0612 | 16.3499 | 0787 | 12.7062 | 30 |
| 31 | 0090 | 110.892 | 0265 | 37.7686 | 0440 | 22.7519 | 0615 | 16.2722 | 0790 | 12.6591 | 29 |
| 32 | 0093 | 107.426 | 0268 | 37.3579 | 0442 | 22.6020 | 0617 | 16.1952 | 0793 | 12.6124 | 28 |
| 33 | 0096 | 104.171 | 0271 | 36.9560 | 0445 | 22.4541 | 0620 | 16.1190 | 0796 | 12.5660 | 27 |
| 34 | 0099 | 101.107 | 0274 | 36.5627 | 0448 | 22.3081 | 0623 | 16.0435 | 0799 | 12.5199 | 26 |
| 35 | 0102 | 98.2179 | 0276 | 36.1776 | 0451 | 22.1640 | 0626 | 15.9687 | 0802 | 12.4742 | 25 |
| 36 | 0105 | 95.4895 | 0279 | 35.8006 | 0454 | 22.0217 | 0629 | 15.8945 | 0805 | 12.4288 | 24 |
| 37 | 0108 | 92.9085 | 0282 | 35.4313 | 0457 | 21.8813 | 0632 | 15.8211 | 0808 | 12.3838 | 23 |
| 38 | 0111 | 90.4643 | 0285 | 35.0695 | 0460 | 21.7426 | 0635 | 15.7483 | 0810 | 12.3390 | 22 |
| 39 | 0113 | 88.1436 | 0288 | 34.7151 | 0463 | 21.6056 | 0638 | 15.6762 | 0813 | 12.2946 | 21 |
| 40 | 0116 | 85.9398 | 0291 | 34.3678 | 0466 | 21.4704 | 0641 | 15.6048 | 0816 | 12.2505 | 20 |
| 41 | 0119 | 83.8435 | 0294 | 34.0273 | 0469 | 21.3369 | 0644 | 15.5340 | 0819 | 12.2067 | 19 |
| 42 | 0122 | 81.8470 | 0297 | 33.6935 | 0472 | 21.2049 | 0647 | 15.4638 | 0822 | 12.1632 | 18 |
| 43 | 0125 | 79.9434 | 0300 | 33.3662 | 0475 | 21.0747 | 0650 | 15.3943 | 0825 | 12.1201 | 17 |
| 44 | 0128 | 78.1263 | 0303 | 33.0452 | 0477 | 20.9460 | 0653 | 15.3254 | 0828 | 12.0772 | 16 |
| 45 | 0131 | 76.3900 | 0306 | 32.7303 | 0480 | 20.8188 | 0655 | 15.2571 | 0831 | 12.0346 | 15 |
| 46 | 0134 | 74.7292 | 0308 | 32.4213 | 0483 | 20.6932 | 0658 | 15.1893 | 0834 | 11.9923 | 14 |
| 47 | 0137 | 73.1390 | 0311 | 32.1181 | 0486 | 20.5691 | 0661 | 15.1222 | 0837 | 11.9504 | 13 |
| 48 | 0140 | 71.6151 | 0314 | 31.8205 | 0489 | 20.4465 | 0664 | 15.0557 | 0840 | 11.9087 | 12 |
| 49 | 0143 | 70.1533 | 0317 | 31.5284 | 0492 | 20.3253 | 0667 | 14.9898 | 0843 | 11.8673 | 11 |
| 50 | 0146 | 68.7501 | 0320 | 31.2416 | 0495 | 20.2056 | 0670 | 14.9244 | 0846 | 11.8262 | 10 |
| 51 | 0148 | 67.4019 | 0323 | 30.9599 | 0498 | 20.0872 | 0673 | 14.8596 | 0849 | 11.7853 | 9 |
| 52 | 0151 | 66.1055 | 0326 | 30.6833 | 0501 | 19.9702 | 0676 | 14.7954 | 0851 | 11.7448 | 8 |
| 53 | 0154 | 64.8580 | 0329 | 30.4116 | 0504 | 19.8546 | 0679 | 14.7317 | 0854 | 11.7045 | 7 |
| 54 | 0157 | 63.6567 | 0332 | 30.1446 | 0507 | 19.7403 | 0682 | 14.6685 | 0857 | 11.6645 | 6 |
| 55 | 0160 | 62.4992 | 0335 | 29.8823 | 0509 | 19.6273 | 0685 | 14.6059 | 0860 | 11.6248 | 5 |
| 56 | 0163 | 61.3829 | 0338 | 29.6245 | 0512 | 19.5156 | 0688 | 14.5438 | 0863 | 11.5853 | 4 |
| 57 | 0166 | 60.3058 | 0340 | 29.3711 | 0515 | 19.4051 | 0690 | 14.4823 | 0866 | 11.5461 | 3 |
| 58 | 0169 | 59.2659 | 0343 | 29.1220 | 0518 | 19.2959 | 0693 | 14.4212 | 0869 | 11.5072 | 2 |
| 59 | 0172 | 58.2612 | 0346 | 28.8771 | 0521 | 19.1879 | 0696 | 14.3607 | 0872 | 11.4685 | 1 |
| 60 | 0175 | 57.2900 | 0349 | 28.6363 | 0524 | 19.0811 | 0699 | 14.3007 | 0875 | 11.4301 | 0 |
| | cot | tan | cot | tan | cot | tan | cot | tan | cot | tan | |
| ′ | 89° | | 88° | | 87° | | 86° | | 85° | | ′ |

| ′ | 5° tan | cot | 6° tan | cot | 7° tan | cot | 8° tan | cot | 9° tan | cot | ′ |
|---|------|---------|------|--------|------|--------|------|--------|------|--------|----|
| 0 | 0875 | 11.4301 | 1051 | 9.5144 | 1228 | 8.1443 | 1405 | 7.1154 | 1584 | 6.3138 | 60 |
| 1 | 0878 | 11.3919 | 1054 | 9.4878 | 1231 | 8.1248 | 1408 | 7.1004 | 1587 | 6.3019 | 59 |
| 2 | 0881 | 11.3540 | 1057 | 9.4614 | 1234 | 8.1054 | 1411 | 7.0855 | 1590 | 6.2901 | 58 |
| 3 | 0884 | 11.3163 | 1060 | 9.4352 | 1237 | 8.0860 | 1414 | 7.0706 | 1593 | 6.2783 | 57 |
| 4 | 0887 | 11.2789 | 1063 | 9.4090 | 1240 | 8.0667 | 1417 | 7.0558 | 1596 | 6.2666 | 56 |
| 5 | 0890 | 11.2417 | 1066 | 9.3831 | 1243 | 8.0476 | 1420 | 7.0410 | 1599 | 6.2549 | 55 |
| 6 | 0892 | 11.2048 | 1069 | 9.3572 | 1246 | 8.0285 | 1423 | 7.0264 | 1602 | 6.2432 | 54 |
| 7 | 0895 | 11.1681 | 1072 | 9.3315 | 1249 | 8.0095 | 1426 | 7.0117 | 1605 | 6.2316 | 53 |
| 8 | 0898 | 11.1316 | 1075 | 9.3060 | 1251 | 7.9906 | 1429 | 6.9972 | 1608 | 6.2200 | 52 |
| 9 | 0901 | 11.0954 | 1078 | 9·2806 | 1254 | 7.9718 | 1432 | 6.9827 | 1611 | 6.2085 | 51 |
| 10 | 0904 | 11.0594 | 1080 | 9.2553 | 1257 | 7.9530 | 1435 | 6.9682 | 1614 | 6.1970 | 50 |
| 11 | 0907 | 11.0237 | 1083 | 9.2302 | 1260 | 7.9344 | 1438 | 6.9538 | 1617 | 6.1856 | 49 |
| 12 | 0910 | 10.9882 | 1086 | 9.2052 | 1263 | 7.9158 | 1441 | 6.9395 | 1620 | 6.1742 | 48 |
| 13 | 0913 | 10.9529 | 1089 | 9.1803 | 1266 | 7.8973 | 1444 | 6.9252 | 1623 | 6.1628 | 47 |
| 14 | 0916 | 10.9178 | 1092 | 9.1555 | 1269 | 7.8789 | 1447 | 6.9110 | 1626 | 6.1515 | 46 |
| 15 | 0919 | 10.8829 | 1095 | 9.1309 | 1272 | 7.8606 | 1450 | 6.8969 | 1629 | 6.1402 | 45 |
| 16 | 0922 | 10.8483 | 1098 | 9.1065 | 1275 | 7.8424 | 1453 | 6.8828 | 1632 | 6.1290 | 44 |
| 17 | 0925 | 10.8139 | 1101 | 9.0821 | 1278 | 7.8243 | 1456 | 6.8687 | 1635 | 6.1178 | 43 |
| 18 | 0928 | 10.7797 | 1104 | 9.0579 | 1281 | 7.8062 | 1459 | 6.8548 | 1638 | 6.1066 | 42 |
| 19 | 0931 | 10.7457 | 1107 | 9.0338 | 1284 | 7.7883 | 1462 | 6.8408 | 1641 | 6.0955 | 41 |
| 20 | 0934 | 10.7119 | 1110 | 9.0098 | 1287 | 7.7704 | 1465 | 6.8269 | 1644 | 6.0844 | 40 |
| 21 | 0936 | 10.6783 | 1113 | 8.9860 | 1290 | 7.7525 | 1468 | 6.8131 | 1647 | 6.0734 | 39 |
| 22 | 0939 | 10.6450 | 1116 | 8.9623 | 1293 | 7.7348 | 1471 | 6.7994 | 1650 | 6.0624 | 38 |
| 23 | 0942 | 10.6118 | 1119 | 8.9387 | 1296 | 7.7171 | 1474 | 6.7856 | 1653 | 6.0514 | 37 |
| 24 | 0945 | 10.5789 | 1122 | 8.9152 | 1299 | 7.6996 | 1477 | 6.7720 | 1655 | 6.0405 | 36 |
| 25 | 0948 | 10.5462 | 1125 | 8.8919 | 1302 | 7.6821 | 1480 | 6.7584 | 1658 | 6.0296 | 35 |
| 26 | 0951 | 10.5136 | 1128 | 8.8686 | 1305 | 7.6647 | 1483 | 6.7448 | 1661 | 6.0188 | 34 |
| 27 | 0954 | 10.4813 | 1131 | 8.8455 | 1308 | 7.6473 | 1486 | 6.7313 | 1664 | 6.0080 | 33 |
| 28 | 0957 | 10.4491 | 1134 | 8.8225 | 1311 | 7.6301 | 1489 | 6.7179 | 1667 | 5.9972 | 32 |
| 29 | 0960 | 10.4172 | 1136 | 8.7996 | 1314 | 7.6129 | 1492 | 6.7045 | 1670 | 5.9865 | 31 |
| 30 | 0963 | 10.3854 | 1139 | 8.7769 | 1317 | 7.5958 | 1495 | 6.6912 | 1673 | 5.9758 | 30 |
| 31 | 0966 | 10.3538 | 1142 | 8.7542 | 1319 | 7.5787 | 1497 | 6.6779 | 1676 | 5.9651 | 29 |
| 32 | 0969 | 10.3224 | 1145 | 8.7317 | 1322 | 7.5618 | 1500 | 6.6646 | 1679 | 5.9545 | 28 |
| 33 | 0972 | 10.2913 | 1148 | 8.7093 | 1325 | 7.5449 | 1503 | 6.6514 | 1682 | 5.9439 | 27 |
| 34 | 0975 | 10.2602 | 1151 | 8.6870 | 1328 | 7.5281 | 1506 | 6.6383 | 1685 | 5.9333 | 26 |
| 35 | 0978 | 10.2294 | 1154 | 8.6648 | 1331 | 7.5113 | 1509 | 6.6252 | 1688 | 5.9228 | 25 |
| 36 | 0981 | 10.1988 | 1157 | 8.6427 | 1334 | 7.4947 | 1512 | 6.6122 | 1691 | 5.9124 | 24 |
| 37 | 0983 | 10.1683 | 1160 | 8.6208 | 1337 | 7.4781 | 1515 | 6.5992 | 1694 | 5.9019 | 23 |
| 38 | 0986 | 10.1381 | 1163 | 8.5989 | 1340 | 7.4615 | 1518 | 6.5863 | 1697 | 5.8915 | 22 |
| 39 | 0989 | 10.1080 | 1166 | 8.5772 | 1343 | 7.4451 | 1521 | 6.5734 | 1700 | 5.8811 | 21 |
| 40 | 0992 | 10.0780 | 1169 | 8.5555 | 1346 | 7.4287 | 1524 | 6.5606 | 1703 | 5.8708 | 20 |
| 41 | 0995 | 10.0483 | 1172 | 8.5340 | 1349 | 7.4124 | 1527 | 6.5478 | 1706 | 5.8605 | 19 |
| 42 | 0998 | 10.0187 | 1175 | 8.5126 | 1352 | 7.3962 | 1530 | 6.5350 | 1709 | 5.8502 | 18 |
| 43 | 1001 | 9.9893 | 1178 | 8.4913 | 1355 | 7.3800 | 1533 | 6.5223 | 1712 | 5.8400 | 17 |
| 44 | 1004 | 9.9601 | 1181 | 8.4701 | 1358 | 7.3639 | 1536 | 6.5097 | 1715 | 5.8298 | 16 |
| 45 | 1007 | 9.9310 | 1184 | 8.4490 | 1361 | 7.3479 | 1539 | 6.4971 | 1718 | 5.8197 | 15 |
| 46 | 1010 | 9.9021 | 1187 | 8.4280 | 1364 | 7.3319 | 1542 | 6.4846 | 1721 | 5.8095 | 14 |
| 47 | 1013 | 9.8734 | 1189 | 8.4071 | 1367 | 7.3160 | 1545 | 6.4721 | 1724 | 5.7994 | 13 |
| 48 | 1016 | 9.8448 | 1192 | 8.3863 | 1370 | 7.3002 | 1548 | 6.4596 | 1727 | 5.7894 | 12 |
| 49 | 1019 | 9.8164 | 1195 | 8.3656 | 1373 | 7.2844 | 1551 | 6.4472 | 1730 | 5.7794 | 11 |
| 50 | 1022 | 9.7882 | 1198 | 8.3450 | 1376 | 7.2687 | 1554 | 6.4348 | 1733 | 5.7694 | 10 |
| 51 | 1025 | 9.7601 | 1201 | 8.3245 | 1379 | 7.2531 | 1557 | 6.4225 | 1736 | 5.7594 | 9 |
| 52 | 1028 | 9.7322 | 1204 | 8.3041 | 1382 | 7.2375 | 1560 | 6.4103 | 1739 | 5.7495 | 8 |
| 53 | 1030 | 9.7044 | 1207 | 8.2838 | 1385 | 7.2220 | 1563 | 6.3980 | 1742 | 5.7396 | 7 |
| 54 | 1033 | 9.6768 | 1210 | 8.2636 | 1388 | 7.2066 | 1566 | 6.3859 | 1745 | 5.7297 | 6 |
| 55 | 1036 | 9.6499 | 1213 | 8.2434 | 1391 | 7.1912 | 1569 | 6.3737 | 1748 | 5.7199 | 5 |
| 56 | 1039 | 9.6220 | 1216 | 8.2234 | 1394 | 7.1759 | 1572 | 6.3617 | 1751 | 5.7101 | 4 |
| 57 | 1042 | 9.5949 | 1219 | 8.2035 | 1397 | 7.1607 | 1575 | 6.3496 | 1754 | 5.7004 | 3 |
| 58 | 1045 | 9.5679 | 1222 | 8.1837 | 1399 | 7.1455 | 1578 | 6.3376 | 1757 | 5.6906 | 2 |
| 59 | 1048 | 9.5411 | 1225 | 8.1640 | 1402 | 7.1304 | 1581 | 6.3257 | 1760 | 5.6809 | 1 |
| 60 | 1051 | 9.5144 | 1228 | 8.1443 | 1405 | 7.1154 | 1584 | 6.3138 | 1763 | 5.6713 | 0 |
| | cot | tan | cot | tan | cot | tan | cot | tan | cot | tan | |
| ′ | 84° | | 83° | | 82° | | 81° | | 80° | | ′ |

| ′ | 10° tan | cot | 11° tan | cot | 12° tan | cot | 13° tan | cot | 14° tan | cot | ′ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **0** | 1763 | 5.6713 | 1944 | 5.1446 | 2126 | 4.7046 | 2309 | 4.3315 | 2493 | 4.0108 | **60** |
| 1 | 1766 | 5.6617 | 1947 | 5.1366 | 2129 | 4.6979 | 2312 | 4.3257 | 2496 | 4.0058 | 59 |
| 2 | 1769 | 5.6521 | 1950 | 5.1286 | 2132 | 4.6912 | 2315 | 4.3200 | 2499 | 4.0009 | 58 |
| 3 | 1772 | 5.6425 | 1953 | 5.1207 | 2135 | 4.6845 | 2318 | 4.3143 | 2503 | 3.9959 | 57 |
| 4 | 1775 | 5.6330 | 1956 | 5.1128 | 2138 | 4.6779 | 2321 | 4.3086 | 2506 | 3.9910 | 56 |
| 5 | 1778 | 5.6234 | 1959 | 5.1049 | 2141 | 4.6712 | 2324 | 4.3029 | 2509 | 3.9861 | 55 |
| 6 | 1781 | 5.6140 | 1962 | 5.0970 | 2144 | 4.6646 | 2327 | 4.2972 | 2512 | 3.9812 | 54 |
| 7 | 1784 | 5.6045 | 1965 | 5.0892 | 2147 | 4.6580 | 2330 | 4.2916 | 2515 | 3.9763 | 53 |
| 8 | 1787 | 5.5951 | 1968 | 5.0814 | 2150 | 4.6514 | 2333 | 4.2859 | 2518 | 3.9714 | 52 |
| 9 | 1790 | 5.5857 | 1971 | 5.0736 | 2153 | 4.6448 | 2336 | 4.2803 | 2521 | 3.9665 | 51 |
| **10** | 1793 | 5.5764 | 1974 | 5.0658 | 2156 | 4.6382 | 2339 | 4.2747 | 2524 | 3.9617 | **50** |
| 11 | 1796 | 5.5671 | 1977 | 5.0581 | 2159 | 4.6317 | 2342 | 4.2691 | 2527 | 3.9568 | 49 |
| 12 | 1799 | 5.5578 | 1980 | 5.0504 | 2162 | 4.6252 | 2345 | 4.2635 | 2530 | 3.9520 | 48 |
| 13 | 1802 | 5.5485 | 1983 | 5.0427 | 2165 | 4.6187 | 2349 | 4.2580 | 2533 | 3.9471 | 47 |
| 14 | 1805 | 5.5393 | 1986 | 5.0350 | 2168 | 4.6122 | 2352 | 4.2524 | 2537 | 3.9423 | 46 |
| 15 | 1808 | 5.5301 | 1989 | 5.0273 | 2171 | 4.6057 | 2355 | 4.2468 | 2540 | 3.9375 | 45 |
| 16 | 1811 | 5.5209 | 1992 | 5.0197 | 2174 | 4.5993 | 2358 | 4.2413 | 2543 | 3.9327 | 44 |
| 17 | 1814 | 5.5118 | 1995 | 5.0121 | 2177 | 4.5928 | 2361 | 4.2358 | 2546 | 3.9279 | 43 |
| 18 | 1817 | 5.5026 | 1998 | 5.0045 | 2180 | 4.5864 | 2364 | 4.2303 | 2549 | 3.9232 | 42 |
| 19 | 1820 | 5.4936 | 2001 | 4.9969 | 2183 | 4.5800 | 2367 | 4.2248 | 2552 | 3.9184 | 41 |
| **20** | 1823 | 5.4845 | 2004 | 4.9894 | 2186 | 4.5736 | 2370 | 4.2193 | 2555 | 3.9136 | **40** |
| 21 | 1826 | 5.4755 | 2007 | 4.9819 | 2189 | 4.5673 | 2373 | 4.2139 | 2558 | 3.9089 | 39 |
| 22 | 1829 | 5.4665 | 2010 | 4.9744 | 2193 | 4.5609 | 2376 | 4.2084 | 2561 | 3.9042 | 38 |
| 23 | 1832 | 5.4575 | 2013 | 4.9669 | 2196 | 4.5546 | 2379 | 4.2030 | 2564 | 3.8995 | 37 |
| 24 | 1835 | 5.4486 | 2016 | 4.9594 | 2199 | 4.5483 | 2382 | 4.1976 | 2568 | 3.8947 | 36 |
| 25 | 1838 | 5.4397 | 2019 | 4.9520 | 2202 | 4.5420 | 2385 | 4.1922 | 2571 | 3.8900 | 35 |
| 26 | 1841 | 5.4308 | 2022 | 4.9446 | 2205 | 4.5357 | 2388 | 4.1868 | 2574 | 3.8854 | 34 |
| 27 | 1844 | 5.4219 | 2025 | 4.9372 | 2208 | 4.5294 | 2392 | 4.1814 | 2577 | 3.8807 | 33 |
| 28 | 1847 | 5.4131 | 2028 | 4.9298 | 2211 | 4.5232 | 2395 | 4.1760 | 2580 | 3.8760 | 32 |
| 29 | 1850 | 5.4043 | 2031 | 4.9225 | 2214 | 4.5169 | 2398 | 4.1706 | 2583 | 3.8714 | 31 |
| **30** | 1853 | 5.3955 | 2035 | 4.9152 | 2217 | 4.5107 | 2401 | 4.1653 | 2586 | 3.8667 | **30** |
| 31 | 1856 | 5.3868 | 2038 | 4.9078 | 2220 | 4.5045 | 2404 | 4.1600 | 2589 | 3.8621 | 29 |
| 32 | 1859 | 5.3781 | 2041 | 4.9006 | 2223 | 4.4983 | 2407 | 4.1547 | 2592 | 3.8575 | 28 |
| 33 | 1862 | 5.3694 | 2044 | 4.8933 | 2226 | 4.4922 | 2410 | 4.1493 | 2595 | 3.8528 | 27 |
| 34 | 1865 | 5.3607 | 2047 | 4.8860 | 2229 | 4.4860 | 2413 | 4.1441 | 2599 | 3.8482 | 26 |
| 35 | 1868 | 5.3521 | 2050 | 4.8788 | 2232 | 4.4799 | 2416 | 4.1388 | 2602 | 3.8436 | 25 |
| 36 | 1871 | 5.3435 | 2053 | 4.8716 | 2235 | 4.4737 | 2419 | 4.1335 | 2605 | 3.8391 | 24 |
| 37 | 1874 | 5.3349 | 2056 | 4.8644 | 2238 | 4.4676 | 2422 | 4.1282 | 2608 | 3.8345 | 23 |
| 38 | 1877 | 5.3263 | 2059 | 4.8573 | 2241 | 4.4615 | 2425 | 4.1230 | 2611 | 3.8299 | 22 |
| 39 | 1880 | 5.3178 | 2062 | 4.8501 | 2244 | 4.4555 | 2428 | 4.1178 | 2614 | 3.8254 | 21 |
| **40** | 1883 | 5.3093 | 2065 | 4.8430 | 2247 | 4.4494 | 2432 | 4.1126 | 2617 | 3.8208 | **20** |
| 41 | 1887 | 5.3008 | 2068 | 4.8359 | 2251 | 4.4434 | 2435 | 4.1074 | 2620 | 3.8163 | 19 |
| 42 | 1890 | 5.2924 | 2071 | 4.8288 | 2254 | 4.4374 | 2438 | 4.1022 | 2623 | 3.8118 | 18 |
| 43 | 1893 | 5.2839 | 2074 | 4.8218 | 2257 | 4.4313 | 2441 | 4.0970 | 2627 | 3.8073 | 17 |
| 44 | 1896 | 5.2755 | 2077 | 4.8147 | 2260 | 4.4253 | 2444 | 4.0918 | 2630 | 3.8028 | 16 |
| 45 | 1899 | 5.2672 | 2080 | 4.8077 | 2263 | 4.4194 | 2447 | 4.0867 | 2633 | 3.7983 | 15 |
| 46 | 1902 | 5.2588 | 2083 | 4.8007 | 2266 | 4.4134 | 2450 | 4.0815 | 2636 | 3.7938 | 14 |
| 47 | 1905 | 5.2505 | 2086 | 4.7937 | 2269 | 4.4075 | 2453 | 4.0764 | 2639 | 3.7893 | 13 |
| 48 | 1908 | 5.2422 | 2089 | 4.7867 | 2272 | 4.4015 | 2456 | 4.0713 | 2642 | 3.7848 | 12 |
| 49 | 1911 | 5.2339 | 2092 | 4.7798 | 2275 | 4.3956 | 2459 | 4.0662 | 2645 | 3.7804 | 11 |
| **50** | 1914 | 5.2257 | 2095 | 4.7729 | 2278 | 4.3897 | 2462 | 4.0611 | 2648 | 3.7760 | **10** |
| 51 | 1917 | 5.2174 | 2098 | 4.7659 | 2281 | 4.3838 | 2465 | 4.0560 | 2651 | 3.7715 | 9 |
| 52 | 1920 | 5.2092 | 2101 | 4.7591 | 2284 | 4.3779 | 2469 | 4.0509 | 2655 | 3.7671 | 8 |
| 53 | 1923 | 5.2011 | 2104 | 4.7522 | 2287 | 4.3721 | 2472 | 4.0459 | 2658 | 3.7627 | 7 |
| 54 | 1926 | 5.1929 | 2107 | 4.7453 | 2290 | 4.3662 | 2475 | 4.0408 | 2661 | 3.7583 | 6 |
| 55 | 1929 | 5.1848 | 2110 | 4.7385 | 2293 | 4.3604 | 2478 | 4.0358 | 2664 | 3.7539 | 5 |
| 56 | 1932 | 5.1767 | 2113 | 4.7317 | 2296 | 4.3546 | 2481 | 4.0308 | 2667 | 3.7495 | 4 |
| 57 | 1935 | 5.1686 | 2116 | 4.7249 | 2299 | 4.3488 | 2484 | 4.0257 | 2670 | 3.7451 | 3 |
| 58 | 1938 | 5.1606 | 2119 | 4.7181 | 2303 | 4.3430 | 2487 | 4.0207 | 2673 | 3.7408 | 2 |
| 59 | 1941 | 5.1526 | 2123 | 4.7114 | 2306 | 4.3372 | 2490 | 4.0158 | 2676 | 3.7364 | 1 |
| **60** | 1944 | 5.1446 | 2126 | 4.7046 | 2309 | 4.3315 | 2493 | 4.0108 | 2679 | 3.7321 | **0** |
| | cot | tan | cot | tan | cot | tan | cot | tan | cot | tan | |
| ′ | 79° | | 78° | | 77° | | 76° | | 75° | | ′ |

| ′ | 15° tan | 15° cot | 16° tan | 16° cot | 17° tan | 17° cot | 18° tan | 18° cot | 19° tan | 19° cot | ′ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **0** | 2679 | 3.7321 | 2867 | 3.4874 | 3057 | 3.2709 | 3249 | 3.0777 | 3443 | 2.9042 | **60** |
| 1 | 2683 | 3.7277 | 2871 | 3.4836 | 3060 | 3.2675 | 3252 | 3.0746 | 3447 | 2.9015 | 59 |
| 2 | 2686 | 3.7234 | 2874 | 3.4798 | 3064 | 3.2641 | 3256 | 3.0716 | 3450 | 2.8987 | 58 |
| 3 | 2689 | 3.7191 | 2877 | 3.4760 | 3067 | 3.2607 | 3259 | 3.0686 | 3453 | 2.8960 | 57 |
| 4 | 2692 | 3.7148 | 2880 | 3.4722 | 3070 | 3.2573 | 3262 | 3.0655 | 3456 | 2.8933 | 56 |
| 5 | 2695 | 3.7105 | 2883 | 3.4684 | 3073 | 3.2539 | 3265 | 3.0625 | 3460 | 2.8905 | 55 |
| 6 | 2698 | 3.7062 | 2886 | 3.4646 | 3076 | 3.2506 | 3269 | 3.0595 | 3463 | 2.8878 | 54 |
| 7 | 2701 | 3.7019 | 2890 | 3.4608 | 3080 | 3.2472 | 3272 | 3.0565 | 3466 | 2.8851 | 53 |
| 8 | 2704 | 3.6976 | 2893 | 3.4570 | 3083 | 3.2438 | 3275 | 3.0535 | 3469 | 2.8824 | 52 |
| 9 | 2708 | 3.6933 | 2896 | 3.4533 | 3086 | 3.2405 | 3278 | 3.0505 | 3473 | 2.8797 | 51 |
| **10** | 2711 | 3.6891 | 2899 | 3.4495 | 3089 | 3.2371 | 3281 | 3.0475 | 3476 | 2.8770 | **50** |
| 11 | 2714 | 3.6848 | 2902 | 3.4458 | 3092 | 3.2338 | 3285 | 3.0445 | 3479 | 2.8743 | 49 |
| 12 | 2717 | 3.6806 | 2905 | 3.4420 | 3096 | 3.2305 | 3288 | 3.0415 | 3482 | 2.8716 | 48 |
| 13 | 2720 | 3.6764 | 2908 | 3.4383 | 3099 | 3.2272 | 3291 | 3.0385 | 3486 | 2.8689 | 47 |
| 14 | 2723 | 3.6722 | 2912 | 3.4346 | 3102 | 3.2238 | 3294 | 3.0356 | 3489 | 2.8662 | 46 |
| 15 | 2726 | 3.6680 | 2915 | 3.4308 | 3105 | 3.2205 | 3298 | 3.0326 | 3492 | 2.8636 | 45 |
| 16 | 2729 | 3.6638 | 2918 | 3.4271 | 3108 | 3.2172 | 3301 | 3.0296 | 3495 | 2.8609 | 44 |
| 17 | 2733 | 3.6596 | 2921 | 3.4234 | 3111 | 3.2139 | 3304 | 3.0267 | 3499 | 2.8582 | 43 |
| 18 | 2736 | 3.6554 | 2924 | 3.4197 | 3115 | 3.2106 | 3307 | 3.0237 | 3502 | 2.8556 | 42 |
| 19 | 2739 | 3.6512 | 2927 | 3.4160 | 3118 | 3.2073 | 3310 | 3.0208 | 3505 | 2.8529 | 41 |
| **20** | 2742 | 3.6470 | 2931 | 3.4124 | 3121 | 3.2041 | 3314 | 3.0178 | 3508 | 2.8502 | **40** |
| 21 | 2745 | 3.6429 | 2934 | 3.4087 | 3124 | 3.2008 | 3317 | 3.0149 | 3512 | 2.8476 | 39 |
| 22 | 2748 | 3.6387 | 2937 | 3.4050 | 3127 | 3.1975 | 3320 | 3.0120 | •3515 | 2.8449 | 38 |
| 23 | 2751 | 3.6346 | 2940 | 3.4014 | 3131 | 3.1943 | 3323 | 3.0090 | 3518 | 2.8423 | 37 |
| 24 | 2754 | 3.6305 | 2943 | 3.3977 | 3134 | 3.1910 | 3327 | 3.0061 | 3522 | 2.8397 | 36 |
| 25 | 2758 | 3.6264 | 2946 | 3.3941 | 3137 | 3.1878 | 3330 | 3.0032 | 3525 | 2.8370 | 35 |
| 26 | 2761 | 3.6222 | 2949 | 3.3904 | 3140 | 3.1845 | 3333 | 3.0003 | 3528 | 2.8344 | 34 |
| 27 | 2764 | 3.6181 | 2953 | 3.3868 | 3143 | 3.1813 | 3336 | 2.9974 | 3531 | 2.8318 | 33 |
| 28 | 2767 | 3.6140 | 2956 | 3.3832 | 3147 | 3.1780 | 3339 | 2.9945 | 3535 | 2.8291 | 32 |
| 29 | 2770 | 3.6100 | 2959 | 3.3796 | 3150 | 3.1748 | 3343 | 2.9916 | 3538 | 2.8265 | 31 |
| **30** | 2773 | 3.6059 | 2962 | 3.3759 | 3153 | 3.1716 | 3346 | 2.9887 | 3541 | 2.8239 | **30** |
| 31 | 2776 | 3.6018 | 2965 | 3.3723 | 3156 | 3.1684 | 3349 | 2.9858 | 3544 | 2.8213 | 29 |
| 32 | 2780 | 3.5978 | 2968 | 3.3687 | 3159 | 3.1652 | 3352 | 2.9829 | 3548 | 2.8187 | 28 |
| 33 | 2783 | 3.5937 | 2972 | 3.3652 | 3163 | 3.1620 | 3356 | 2.9800 | 3551 | 2.8161 | 27 |
| 34 | 2786 | 3.5897 | 2975 | 3.3616 | 3166 | 3.1588 | 3359 | 2.9772 | 3554 | 2.8135 | 26 |
| 35 | 2789 | 3.5856 | 2978 | 3.3580 | 3169 | 3.1556 | 3362 | 2.9743 | 3558 | 2.8109 | 25 |
| 36 | 2792 | 3.5816 | 2981 | 3.3544 | 3172 | 3.1524 | 3365 | 2.9714 | 3561 | 2.8083 | 24 |
| 37 | 2795 | 3.5776 | 2984 | 3.3509 | 3175 | 3.1492 | 3369 | 2.9686 | 3564 | 2.8057 | 23 |
| 38 | 2798 | 3.5736 | 2987 | 3.3473 | 3179 | 3.1460 | 3372 | 2.9657 | 3567 | 2.8032 | 22 |
| 39 | 2801 | 3.5696 | 2991 | 3.3438 | 3182 | 3.1429 | 3375 | 2.9629 | 3571 | 2.8006 | 21 |
| **40** | 2805 | 3.5656 | 2994 | 3.3402 | 3185 | 3.1397 | 3378 | 2.9600 | 3574 | 2.7980 | **20** |
| 41 | 2808 | 3.5616 | 2997 | 3.3367 | 3188 | 3.1366 | 3382 | 2.9572 | 3577 | 2.7955 | 19 |
| 42 | 2811 | 3.5576 | 3000 | 3.3332 | 3191 | 3.1334 | 3385 | 2.9544 | 3581 | 2.7929 | 18 |
| 43 | 2814 | 3.5536 | 3003 | 3.3297 | 3195 | 3.1303 | 3388 | 2.9515 | 3584 | 2.7903 | 17 |
| 44 | 2817 | 3.5497 | 3006 | 3.3261 | 3198 | 3.1271 | 3391 | 2.9487 | 3587 | 2.7878 | 16 |
| 45 | 2820 | 3.5457 | 3010 | 3.3226 | 3201 | 3.1240 | 3395 | 2.9459 | 3590 | 2.7852 | 15 |
| 46 | 2823 | 3.5418 | 3013 | 3.3191 | 3204 | 3.1209 | 3398 | 2.9431 | 3594 | 2.7827 | 14 |
| 47 | 2827 | 3.5379 | 3016 | 3.3156 | 3207 | 3.1178 | 3401 | 2.9403 | 3597 | 2.7801 | 13 |
| 48 | 2830 | 3.5339 | 3019 | 3.3122 | 3211 | 3.1146 | 3404 | 2.9375 | 3600 | 2.7776 | 12 |
| 49 | 2833 | 3.5300 | 3022 | 3.3087 | 3214 | 3.1115 | 3408 | 2.9347 | 3604 | 2.7751 | 11 |
| **50** | 2836 | 3.5261 | 3026 | 3.3052 | 3217 | 3.1084 | 3411 | 2.9319 | 3607 | 2.7725 | **10** |
| 51 | 2839 | 3.5222 | 3029 | 3.3017 | 3220 | 3.1053 | 3414 | 2.9291 | 3610 | 2.7700 | 9 |
| 52 | 2842 | 3.5183 | 3032 | 3.2983 | 3223 | 3.1022 | 3417 | 2.9263 | 3613 | 2.7675 | 8 |
| 53 | 2845 | 3.5144 | 3035 | 3.2948 | 3227 | 3.0991 | 3421 | 2.9235 | 3617 | 2.7650 | 7 |
| 54 | 2849 | 3.5105 | 3038 | 3.2914 | 3230 | 3.0961 | 3424 | 2.9208 | 3620 | 2.7625 | 6 |
| 55 | 2852 | 3.5067 | 3041 | 3.2880 | 3233 | 3.0930 | 3427 | 2.9180 | 3623 | 2.7500 | 5 |
| 56 | 2855 | 3.5028 | 3045 | 3.2845 | 3236 | 3.0899 | 3430 | 2.9152 | 3627 | 2.7575 | 4 |
| 57 | 2858 | 3.4989 | 3048 | 3.2811 | 3240 | 3.0868 | 3434 | 2.9125 | 3630 | 2.7550 | 3 |
| 58 | 2861 | 3.4951 | 3051 | 3.2777 | 3243 | 3.0838 | 3437 | 2.9097 | 3633 | 2.7525 | 2 |
| 59 | 2864 | 3.4912 | 3054 | 3.2743 | 3246 | 3.0807 | 3440 | 2.9070 | 3636 | 2.7500 | 1 |
| **60** | 2867 | 3.4874 | 3057 | 3.2709 | 3249 | 3.0777 | 3443 | 2.9042 | 3640 | 2.7475 | **0** |
| | cot | tan | cot | tan | cot | tan | cot | tan | cot | . tan | |
| ′ | **74°** | | **73°** | | **72°** | | **71°** | | **70°** | | ′ |

| ′ | 20° tan | cot | 21° tan | cot | 22° tan | cot | 23° tan | cot | 24° tan | cot | ′ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 3640 | 2.7475 | 3839 | 2.6051 | 4040 | 2.4751 | 4245 | 2.3559 | 4452 | 2.2460 | 60 |
| 1 | 3643 | 2.7450 | 3842 | 2.6028 | 4044 | 2.4730 | 4248 | 2.3539 | 4456 | 2.2443 | 59 |
| 2 | 3646 | 2.7425 | 3845 | 2.6006 | 4047 | 2.4709 | 4252 | 2.3520 | 4459 | 2.2425 | 58 |
| 3 | 3650 | 2.7400 | 3849 | 2.5983 | 4050 | 2.4689 | 4255 | 2.3501 | 4463 | 2.2408 | 57 |
| 4 | 3653 | 2.7376 | 3852 | 2.5961 | 4054 | 2.4668 | 4258 | 2.3483 | 4466 | 2.2390 | 56 |
| 5 | 3656 | 2.7351 | 3855 | 2.5938 | 4057 | 2.4648 | 4262 | 2.3464 | 4470 | 2.2373 | 55 |
| 6 | 3659 | 2.7326 | 3859 | 2.5916 | 4061 | 2.4627 | 4265 | 2.3445 | 4473 | 2.2355 | 54 |
| 7 | 3663 | 2.7302 | 3862 | 2.5893 | 4064 | 2.4606 | 4269 | 2.3426 | 4477 | 2.2338 | 53 |
| 8 | 3666 | 2.7277 | 3865 | 2.5871 | 4067 | 2.4586 | 4272 | 2.3407 | 4480 | 2.2320 | 52 |
| 9 | 3669 | 2.7253 | 3869 | 2.5848 | 4071 | 2.4566 | 4276 | 2.3388 | 4484 | 2.2303 | 51 |
| 10 | 3673 | 2.7228 | 3872 | 2.5826 | 4074 | 2.4545 | 4279 | 2.3369 | 4487 | 2.2286 | 50 |
| 11 | 3676 | 2.7204 | 3875 | 2.5804 | 4078 | 2.4525 | 4283 | 2.3351 | 4491 | 2.2268 | 49 |
| 12 | 3679 | 2.7179 | 3879 | 2.5782 | 4081 | 2.4504 | 4286 | 2.3332 | 4494 | 2.2251 | 48 |
| 13 | 3683 | 2.7155 | 3882 | 2.5759 | 4084 | 2.4484 | 4289 | 2.3313 | 4498 | 2.2234 | 47 |
| 14 | 3686 | 2.7130 | 3885 | 2.5737 | 4088 | 2.4464 | 4293 | 2.3294 | 4501 | 2.2216 | 46 |
| 15 | 3689 | 2.7106 | 3889 | 2.5715 | 4091 | 2.4443 | 4296 | 2.3276 | 4505 | 2.2199 | 45 |
| 16 | 3693 | 2.7082 | 3892 | 2.5693 | 4095 | 2.4423 | 4300 | 2.3257 | 4508 | 2.2182 | 44 |
| 17 | 3696 | 2.7058 | 3895 | 2.5671 | 4098 | 2.4403 | 4303 | 2.3238 | 4512 | 2.2165 | 43 |
| 18 | 3699 | 2.7034 | 3899 | 2.5649 | 4101 | 2.4383 | 4307 | 2.3220 | 4515 | 2.2148 | 42 |
| 19 | 3702 | 2.7009 | 3902 | 2.5627 | 4105 | 2.4362 | 4310 | 2.3201 | 4519 | 2.2130 | 41 |
| 20 | 3706 | 2.6985 | 3906 | 2.5605 | 4108 | 2.4342 | 4314 | 2.3183 | 4522 | 2.2113 | 40 |
| 21 | 3709 | 2.6961 | 3909 | 2.5583 | 4111 | 2.4322 | 4317 | 2.3164 | 4526 | 2.2096 | 39 |
| 22 | 3712 | 2.6937 | 3912 | 2.5561 | 4115 | 2.4302 | 4320 | 2.3146 | 4529 | 2.2079 | 38 |
| 23 | 3716 | 2.6913 | 3916 | 2.5539 | 4118 | 2.4282 | 4324 | 2.3127 | 4533 | 2.2062 | 37 |
| 24 | 3719 | 2.6889 | 3919 | 2.5517 | 4122 | 2.4262 | 4327 | 2.3109 | 4536 | 2.2045 | 36 |
| 25 | 3722 | 2.6865 | 3922 | 2.5495 | 4125 | 2.4242 | 4331 | 2.3090 | 4540 | 2.2028 | 35 |
| 26 | 3726 | 2.6841 | 3926 | 2.5473 | 4129 | 2.4222 | 4334 | 2.3072 | 4543 | 2.2011 | 34 |
| 27 | 3729 | 2.6818 | 3929 | 2.5452 | 4132 | 2.4202 | 4338 | 2.3053 | 4547 | 2.1994 | 33 |
| 28 | 3732 | 2.6794 | 3932 | 2.5430 | 4135 | 2.4182 | 4341 | 2.3035 | 4550 | 2.1977 | 32 |
| 29 | 3736 | 2.6770 | 3936 | 2.5408 | 4139 | 2.4162 | 4345 | 2.3017 | 4554 | 2.1960 | 31 |
| 30 | 3739 | 2.6746 | 3939 | 2.5386 | 4142 | 2.4142 | 4348 | 2.2998 | 4557 | 2.1943 | 30 |
| 31 | 3742 | 2.6723 | 3942 | 2.5365 | 4146 | 2.4122 | 4352 | 2.2980 | 4561 | 2.1926 | 29 |
| 32 | 3745 | 2.6699 | 3946 | 2.5343 | 4149 | 2.4102 | 4355 | 2.2962 | 4564 | 2.1909 | 28 |
| 33 | 3749 | 2.6675 | 3949 | 2.5322 | 4152 | 2.4083 | 4359 | 2.2944 | 4568 | 2.1892 | 27 |
| 34 | 3752 | 2.6652 | 3953 | 2.5300 | 4156 | 2.4063 | 4362 | 2.2925 | 4571 | 2.1876 | 26 |
| 35 | 3755 | 2.6628 | 3956 | 2.5279 | 4159 | 2.4043 | 4365 | 2.2907 | 4575 | 2.1859 | 25 |
| 36 | 3759 | 2.6605 | 3959 | 2.5257 | 4163 | 2.4023 | 4369 | 2.2889 | 4578 | 2.1842 | 24 |
| 37 | 3762 | 2.6581 | 3963 | 2.5236 | 4166 | 2.4004 | 4372 | 2.2871 | 4582 | 2.1825 | 23 |
| 38 | 3765 | 2.6558 | 3966 | 2.5214 | 4169 | 2.3984 | 4376 | 2.2853 | 4585 | 2.1808 | 22 |
| 39 | 3769 | 2.6534 | 3969 | 2.5193 | 4173 | 2.3964 | 4379 | 2.2835 | 4589 | 2.1792 | 21 |
| 40 | 3772 | 2.6511 | 3973 | 2.5172 | 4176 | 2.3945 | 4383 | 2.2817 | 4592 | 2.1775 | 20 |
| 41 | 3775 | 2.6488 | 3976 | 2.5150 | 4180 | 2.3925 | 4386 | 2.2799 | 4596 | 2.1758 | 19 |
| 42 | 3779 | 2.6464 | 3979 | 2.5129 | 4183 | 2.3906 | 4390 | 2.2781 | 4599 | 2.1742 | 18 |
| 43 | 3782 | 2.6441 | 3983 | 2.5108 | 4187 | 2.3886 | 4393 | 2.2763 | 4603 | 2.1725 | 17 |
| 44 | 3785 | 2.6418 | 3986 | 2.5086 | 4190 | 2.3867 | 4397 | 2.2745 | 4607 | 2.1708 | 16 |
| 45 | 3789 | 2.6395 | 3990 | 2.5065 | 4193 | 2.3847 | 4400 | 2.2727 | 4610 | 2.1692 | 15 |
| 46 | 3792 | 2.6371 | 3993 | 2.5044 | 4197 | 2.3828 | 4404 | 2.2709 | 4614 | 2.1675 | 14 |
| 47 | 3795 | 2.6348 | 3996 | 2.5023 | 4200 | 2.3808 | 4407 | 2.2691 | 4617 | 2.1659 | 13 |
| 48 | 3799 | 2.6325 | 4000 | 2.5002 | 4204 | 2.3789 | 4411 | 2.2673 | 4621 | 2.1642 | 12 |
| 49 | 3802 | 2.6302 | 4003 | 2.4981 | 4207 | 2.3770 | 4414 | 2.2655 | 4624 | 2.1625 | 11 |
| 50 | 3805 | 2.6279 | 4006 | 2.4960 | 4210 | 2.3750 | 4417 | 2.2637 | 4628 | 2.1609 | 10 |
| 51 | 3809 | 2.6256 | 4010 | 2.4939 | 4214 | 2.3731 | 4421 | 2.2620 | 4631 | 2.1592 | 9 |
| 52 | 3812 | 2.6233 | 4013 | 2.4918 | 4217 | 2.3712 | 4424 | 2.2602 | 4635 | 2.1576 | 8 |
| 53 | 3815 | 2.6210 | 4017 | 2.4897 | 4221 | 2.3693 | 4428 | 2.2584 | 4638 | 2.1560 | 7 |
| 54 | 3819 | 2.6187 | 4020 | 2.4876 | 4224 | 2.3673 | 4431 | 2.2566 | 4642 | 2.1543 | 6 |
| 55 | 3822 | 2.6165 | 4023 | 2.4855 | 4228 | 2.3654 | 4435 | 2.2549 | 4645 | 2.1527 | 5 |
| 56 | 3825 | 2.6142 | 4027 | 2.4834 | 4231 | 2.3635 | 4438 | 2.2531 | 4649 | 2.1510 | 4 |
| 57 | 3829 | 2.6119 | 4030 | 2.4813 | 4234 | 2.3616 | 4442 | 2.2513 | 4652 | 2.1494 | 3 |
| 58 | 3832 | 2.6096 | 4033 | 2.4792 | 4238 | 2.3597 | 4445 | 2.2496 | 4656 | 2.1478 | 2 |
| 59 | 3835 | 2.6074 | 4037 | 2.4772 | 4241 | 2.3578 | 4449 | 2.2478 | 4660 | 2.1461 | 1 |
| 60 | 3839 | 2.6051 | 4040 | 2.4751 | 4245 | 2.3559 | 4452 | 2.2460 | 4663 | 2.1445 | 0 |
| | cot | tan | cot | tan | cot | tan | cot | tan | cot | tan | ′ |
| | 69° | | 68° | | 67° | | 66° | | 65° | | |

| ′ | 25° tan | 25° cot | 26° tan | 26° cot | 27° tan | 27° cot | 28° tan | 28° cot | 29° tan | 29° cot | ′ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **0** | 4663 | 2.1445 | 4877 | 2.0503 | 5095 | 1.9626 | 5317 | 1.8807 | 5543 | 1.8040 | **60** |
| 1 | 4667 | 2.1429 | 4881 | 2.0488 | 5099 | 1.9612 | 5321 | 1.8794 | 5547 | 1.8028 | 59 |
| 2 | 4670 | 2.1413 | 4885 | 2.0473 | 5103 | 1.9598 | 5325 | 1.8781 | 5551 | 1.8016 | 58 |
| 3 | 4674 | 2.1396 | 4888 | 2.0458 | 5106 | 1.9584 | 5328 | 1.8768 | 5555 | 1.8003 | 57 |
| 4 | 4677 | 2.1380 | 4892 | 2.0443 | 5110 | 1.9570 | 5332 | 1.8755 | 5558 | 1.7991 | 56 |
| **5** | 4681 | 2.1364 | 4895 | 2.0428 | 5114 | 1.9556 | 5336 | 1.8741 | 5562 | 1.7979 | 55 |
| 6 | 4684 | 2.1348 | 4899 | 2.0413 | 5117 | 1.9542 | 5340 | 1.8728 | 5566 | 1.7966 | 54 |
| 7 | 4688 | 2.1332 | 4903 | 2.0398 | 5121 | 1.9528 | 5343 | 1.8715 | 5570 | 1.7954 | 53 |
| 8 | 4691 | 2.1315 | 4906 | 2.0383 | 5125 | 1.9514 | 5347 | 1.8702 | 5574 | 1.7942 | 52 |
| 9 | 4695 | 2.1299 | 4910 | 2.0368 | 5128 | 1.9500 | 5351 | 1.8689 | 5577 | 1.7930 | 51 |
| **10** | 4699 | 2.1283 | 4913 | 2.0353 | 5132 | 1.9486 | 5354 | 1.8676 | 5581 | 1.7917 | **50** |
| 11 | 4702 | 2.1267 | 4917 | 2.0338 | 5136 | 1.9472 | 5358 | 1.8663 | 5585 | 1.7905 | 49 |
| 12 | 4706 | 2.1251 | 4921 | 2.0323 | 5139 | 1.9458 | 5362 | 1.8650 | 5589 | 1.7893 | 48 |
| 13 | 4709 | 2.1235 | 4924 | 2.0308 | 5143 | 1.9444 | 5366 | 1.8637 | 5593 | 1.7881 | 47 |
| 14 | 4713 | 2.1219 | 4928 | 2.0293 | 5147 | 1.9430 | 5369 | 1.8624 | 5596 | 1.7868 | 46 |
| 15 | 4716 | 2.1203 | 4931 | 2.0278 | 5150 | 1.9416 | 5373 | 1.8611 | 5600 | 1.7856 | 45 |
| 16 | 4720 | 2.1187 | 4935 | 2.0263 | 5154 | 1.9402 | 5377 | 1.8598 | 5604 | 1.7844 | 44 |
| 17 | 4723 | 2.1171 | 4939 | 2.0248 | 5158 | 1.9388 | 5381 | 1.8585 | 5608 | 1.7832 | 43 |
| 18 | 4727 | 2.1155 | 4942 | 2.0233 | 5161 | 1.9375 | 5384 | 1.8572 | 5612 | 1.7820 | 42 |
| 19 | 4731 | 2.1139 | 4946 | 2.0219 | 5165 | 1.9361 | 5388 | 1.8559 | 5616 | 1.7808 | 41 |
| **20** | 4734 | 2.1123 | 4950 | 2.0204 | 5169 | 1.9347 | 5392 | 1.8546 | 5619 | 1.7796 | **40** |
| 21 | 4738 | 2.1107 | 4953 | 2.0189 | 5172 | 1.9333 | 5396 | 1.8533 | 5623 | 1.7783 | 39 |
| 22 | 4741 | 2.1092 | 4957 | 2.0174 | 5176 | 1.9319 | 5399 | 1.8520 | 5627 | 1.7771 | 38 |
| 23 | 4745 | 2.1076 | 4960 | 2.0160 | 5180 | 1.9306 | 5403 | 1.8507 | 5631 | 1.7759 | 37 |
| 24 | 4748 | 2.1060 | 4964 | 2.0145 | 5184 | 1.9292 | 5407 | 1.8495 | 5635 | 1.7747 | 36 |
| 25 | 4752 | 2.1044 | 4968 | 2.0130 | 5187 | 1.9278 | 5411 | 1.8482 | 5639 | 1.7735 | 35 |
| 26 | 4755 | 2.1028 | 4971 | 2.0115 | 5191 | 1.9265 | 5415 | 1.8469 | 5642 | 1.7723 | 34 |
| 27 | 4759 | 2.1013 | 4975 | 2.0101 | 5195 | 1.9251 | 5418 | 1.8456 | 5646 | 1.7711 | 33 |
| 28 | 4763 | 2.0997 | 4979 | 2.0086 | 5198 | 1.9237 | 5422 | 1.8443 | 5650 | 1.7699 | 32 |
| 29 | 4766 | 2.0981 | 4982 | 2.0072 | 5202 | 1.9223 | 5426 | 1.8430 | 5654 | 1.7687 | 31 |
| **30** | 4770 | 2.0965 | 4986 | 2.0057 | 5206 | 1.9210 | 5430 | 1.8418 | 5658 | 1.7675 | **30** |
| 31 | 4773 | 2.0950 | 4989 | 2.0042 | 5209 | 1.9196 | 5433 | 1.8405 | 5662 | 1.7663 | 29 |
| 32 | 4777 | 2.0934 | 4993 | 2.0028 | 5213 | 1.9183 | 5437 | 1.8392 | 5665 | 1.7651 | 28 |
| 33 | 4780 | 2.0918 | 4997 | 2.0013 | 5217 | 1.9169 | 5441 | 1.8379 | 5669 | 1.7639 | 27 |
| 34 | 4784 | 2.0903 | 5000 | 1.9999 | 5220 | 1.9155 | 5445 | 1.8367 | 5673 | 1.7627 | 26 |
| 35 | 4788 | 2.0887 | 5004 | 1.9984 | 5224 | 1.9142 | 5448 | 1.8354 | 5677 | 1.7615 | 25 |
| 36 | 4791 | 2.0872 | 5008 | 1.9970 | 5228 | 1.9128 | 5452 | 1.8341 | 5681 | 1.7603 | 24 |
| 37 | 4795 | 2.0856 | 5011 | 1.9955 | 5232 | 1.9115 | 5456 | 1.8329 | 5685 | 1.7591 | 23 |
| 38 | 4798 | 2.0840 | 5015 | 1.9941 | 5235 | 1.9101 | 5460 | 1.8316 | 5688 | 1.7579 | 22 |
| 39 | 4802 | 2.0825 | 5019 | 1.9926 | 5239 | 1.9088 | 5464 | 1.8303 | 5692 | 1.7567 | 21 |
| **40** | 4806 | 2.0809 | 5022 | 1.9912 | 5243 | 1.9074 | 5467 | 1.8291 | 5696 | 1.7556 | **20** |
| 41 | 4809 | 2.0794 | 5026 | 1.9897 | 5246 | 1.9061 | 5471 | 1.8278 | 5700 | 1.7544 | 19 |
| 42 | 4813 | 2.0778 | 5029 | 1.9883 | 5250 | 1.9047 | 5475 | 1.8265 | 5704 | 1.7532 | 18 |
| 43 | 4816 | 2.0763 | 5033 | 1.9868 | 5254 | 1.9034 | 5479 | 1.8253 | 5708 | 1.7520 | 17 |
| 44 | 4820 | 2.0748 | 5037 | 1.9854 | 5258 | 1.9020 | 5482 | 1.8240 | 5712 | 1.7508 | 16 |
| 45 | 4823 | 2.0732 | 5040 | 1.9840 | 5261 | 1.9007 | 5486 | 1.8228 | 5715 | 1.7496 | 15 |
| 46 | 4827 | 2.0717 | 5044 | 1.9825 | 5265 | 1.8993 | 5490 | 1.8215 | 5719 | 1.7485 | 14 |
| 47 | 4831 | 2.0701 | 5048 | 1.9811 | 5269 | 1.8980 | 5494 | 1.8202 | 5723 | 1.7473 | 13 |
| 48 | 4834 | 2.0686 | 5051 | 1.9797 | 5272 | 1.8967 | 5498 | 1.8190 | 5727 | 1.7461 | 12 |
| 49 | 4838 | 2.0671 | 5055 | 1.9782 | 5276 | 1.8953 | 5501 | 1.8177 | 5731 | 1.7449 | 11 |
| **50** | 4841 | 2.0655 | 5059 | 1.9768 | 5280 | 1.8940 | 5505 | 1.8165 | 5735 | 1.7437 | **10** |
| 51 | 4845 | 2.0640 | 5062 | 1.9754 | 5284 | 1.8927 | 5509 | 1.8152 | 5739 | 1.7426 | 9 |
| 52 | 4849 | 2.0625 | 5066 | 1.9740 | 5287 | 1.8913 | 5513 | 1.8140 | 5743 | 1.7414 | 8 |
| 53 | 4852 | 2.0609 | 5070 | 1.9725 | 5291 | 1.8900 | 5517 | 1.8127 | 5746 | 1.7402 | 7 |
| 54 | 4856 | 2.0594 | 5073 | 1.9711 | 5295 | 1.8887 | 5520 | 1.8115 | 5750 | 1.7391 | 6 |
| 55 | 4859 | 2.0579 | 5077 | 1.9697 | 5298 | 1.8873 | 5524 | 1.8103 | 5754 | 1.7379 | 5 |
| 56 | 4863 | 2.0564 | 5081 | 1.9683 | 5302 | 1.8860 | 5528 | 1.8090 | 5758 | 1.7367 | 4 |
| 57 | 4867 | 2.0549 | 5084 | 1.9669 | 5306 | 1.8847 | 5532 | 1.8078 | 5762 | 1.7355 | 3 |
| 58 | 4870 | 2.0533 | 5088 | 1.9654 | 5310 | 1.8834 | 5535 | 1.8065 | 5766 | 1.7344 | 2 |
| 59 | 4874 | 2.0518 | 5092 | 1.9640 | 5313 | 1.8820 | 5539 | 1.8053 | 5770 | 1.7332 | 1 |
| **60** | 4877 | 2.0503 | 5095 | 1.9626 | 5317 | 1.8807 | 5543 | 1.8040 | 5774 | 1.7321 | **0** |
| | cot | tan | cot | tan | cot | tan | cot | tan | cot | tan | |
| ′ | **64°** | | **63°** | | **62°** | | **61°** | | **60°** | | ′ |

| ′ | 30° tan | 30° cot | 31° tan | 31° cot | 32° tan | 32° cot | 33° tan | 33° cot | 34° tan | 34° cot | ′ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 5774 | 1.7321 | 6009 | 1.6643 | 6249 | 1.6003 | 6494 | 1.5399 | 6745 | 1.4826 | 60 |
| 1 | 5777 | 1.7309 | 6013 | 1.6632 | 6253 | 1.5993 | 6498 | 1.5389 | 6749 | 1.4816 | 59 |
| 2 | 5781 | 1.7297 | 6017 | 1.6621 | 6257 | 1.5983 | 6502 | 1.5379 | 6754 | 1.4807 | 58 |
| 3 | 5785 | 1.7286 | 6020 | 1.6610 | 6261 | 1.5972 | 6506 | 1.5369 | 6758 | 1.4798 | 57 |
| 4 | 5789 | 1.7274 | 6024 | 1.6599 | 6265 | 1.5962 | 6511 | 1.5359 | 6762 | 1.4788 | 56 |
| 5 | 5793 | 1.7262 | 6028 | 1.6588 | 6269 | 1.5952 | 6515 | 1.5350 | 6766 | 1.4779 | 55 |
| 6 | 5797 | 1.7251 | 6032 | 1.6577 | 6273 | 1.5941 | 6519 | 1.5340 | 6771 | 1.4770 | 54 |
| 7 | 5801 | 1.7239 | 6036 | 1.6566 | 6277 | 1.5931 | 6523 | 1.5330 | 6775 | 1.4761 | 53 |
| 8 | 5805 | 1.7228 | 6040 | 1.6555 | 6281 | 1.5921 | 6527 | 1.5320 | 6779 | 1.4751 | 52 |
| 9 | 5808 | 1.7216 | 6044 | 1.6545 | 6285 | 1.5911 | 6531 | 1.5311 | 6783 | 1.4742 | 51 |
| 10 | 5812 | 1.7205 | 6048 | 1.6534 | 6289 | 1.5900 | 6536 | 1.5301 | 6787 | 1.4733 | 50 |
| 11 | 5816 | 1.7193 | 6052 | 1.6523 | 6293 | 1.5890 | 6540 | 1.5291 | 6792 | 1.4724 | 49 |
| 12 | 5820 | 1.7182 | 6056 | 1.6512 | 6297 | 1.5880 | 6544 | 1.5282 | 6796 | 1.4715 | 48 |
| 13 | 5824 | 1.7170 | 6060 | 1.6501 | 6301 | 1.5869 | 6548 | 1.5272 | 6800 | 1.4705 | 47 |
| 14 | 5828 | 1.7159 | 6064 | 1.6490 | 6305 | 1.5859 | 6552 | 1.5262 | 6805 | 1.4696 | 46 |
| 15 | 5832 | 1.7147 | 6068 | 1.6479 | 6310 | 1.5849 | 6556 | 1.5253 | 6809 | 1.4687 | 45 |
| 16 | 5836 | 1.7136 | 6072 | 1.6469 | 6314 | 1.5839 | 6560 | 1.5243 | 6813 | 1.4678 | 44 |
| 17 | 5840 | 1.7124 | 6076 | 1.6458 | 6318 | 1.5829 | 6565 | 1.5233 | 6817 | 1.4669 | 43 |
| 18 | 5844 | 1.7113 | 6080 | 1.6447 | 6322 | 1.5818 | 6569 | 1.5224 | 6822 | 1.4659 | 42 |
| 19 | 5847 | 1.7102 | 6084 | 1.6436 | 6326 | 1.5808 | 6573 | 1.5214 | 6826 | 1.4650 | 41 |
| 20 | 5851 | 1.7090 | 6088 | 1.6426 | 6330 | 1.5798 | 6577 | 1.5204 | 6830 | 1.4641 | 40 |
| 21 | 5855 | 1.7079 | 6092 | 1.6415 | 6334 | 1.5788 | 6581 | 1.5195 | 6834 | 1.4632 | 39 |
| 22 | 5859 | 1.7067 | 6096 | 1.6404 | 6338 | 1.5778 | 6585 | 1.5185 | 6839 | 1.4623 | 38 |
| 23 | 5863 | 1.7056 | 6100 | 1.6393 | 6342 | 1.5768 | 6590 | 1.5175 | 6843 | 1.4614 | 37 |
| 24 | 5867 | 1.7045 | 6104 | 1.6383 | 6346 | 1.5757 | 6594 | 1.5166 | 6847 | 1.4605 | 36 |
| 25 | 5871 | 1.7033 | 6108 | 1.6372 | 6350 | 1.5747 | 6598 | 1.5156 | 6851 | 1.4596 | 35 |
| 26 | 5875 | 1.7022 | 6112 | 1.6361 | 6354 | 1.5737 | 6602 | 1.5147 | 6856 | 1.4586 | 34 |
| 27 | 5879 | 1.7011 | 6116 | 1.6351 | 6358 | 1.5727 | 6606 | 1.5137 | 6860 | 1.4577 | 33 |
| 28 | 5883 | 1.6999 | 6120 | 1.6340 | 6363 | 1.5717 | 6610 | 1.5127 | 6864 | 1.4568 | 32 |
| 29 | 5887 | 1.6988 | 6124 | 1.6329 | 6367 | 1.5707 | 6615 | 1.5118 | 6869 | 1.4559 | 31 |
| 30 | 5890 | 1.6977 | 6128 | 1.6319 | 6371 | 1.5697 | 6619 | 1.5108 | 6873 | 1.4550 | 30 |
| 31 | 5894 | 1.6965 | 6132 | 1.6308 | 6375 | 1.5687 | 6623 | 1.5099 | 6877 | 1.4541 | 29 |
| 32 | 5898 | 1.6954 | 6136 | 1.6297 | 6379 | 1.5677 | 6627 | 1.5089 | 6881 | 1.4532 | 28 |
| 33 | 5902 | 1.6943 | 6140 | 1.6287 | 6383 | 1.5667 | 6631 | 1.5080 | 6886 | 1.4523 | 27 |
| 34 | 5906 | 1.6932 | 6144 | 1.6276 | 6387 | 1.5657 | 6636 | 1.5070 | 6890 | 1.4514 | 26 |
| 35 | 5910 | 1.6920 | 6148 | 1.6265 | 6391 | 1.5647 | 6640 | 1.5061 | 6894 | 1.4505 | 25 |
| 36 | 5914 | 1.6909 | 6152 | 1.6255 | 6395 | 1.5637 | 6644 | 1.5051 | 6899 | 1.4496 | 24 |
| 37 | 5918 | 1.6898 | 6156 | 1.6244 | 6399 | 1.5627 | 6648 | 1.5042 | 6903 | 1.4487 | 23 |
| 38 | 5922 | 1.6887 | 6160 | 1.6234 | 6403 | 1.5617 | 6652 | 1.5032 | 6907 | 1.4478 | 22 |
| 39 | 5926 | 1.6875 | 6164 | 1.6223 | 6408 | 1.5607 | 6657 | 1.5023 | 6911 | 1.4469 | 21 |
| 40 | 5930 | 1.6864 | 6168 | 1.6212 | 6412 | 1.5597 | 6661 | 1.5013 | 6916 | 1.4460 | 20 |
| 41 | 5934 | 1.6853 | 6172 | 1.6202 | 6416 | 1.5587 | 6665 | 1.5004 | 6920 | 1.4451 | 19 |
| 42 | 5938 | 1.6842 | 6176 | 1.6191 | 6420 | 1.5577 | 6669 | 1.4994 | 6924 | 1.4442 | 18 |
| 43 | 5942 | 1.6831 | 6180 | 1.6181 | 6424 | 1.5567 | 6673 | 1.4985 | 6929 | 1.4433 | 17 |
| 44 | 5945 | 1.6820 | 6184 | 1.6170 | 6428 | 1.5557 | 6678 | 1.4975 | 6933 | 1.4424 | 16 |
| 45 | 5949 | 1.6808 | 6188 | 1.6160 | 6432 | 1.5547 | 6682 | 1.4966 | 6937 | 1.4415 | 15 |
| 46 | 5953 | 1.6797 | 6192 | 1.6149 | 6436 | 1.5537 | 6686 | 1.4957 | 6942 | 1.4406 | 14 |
| 47 | 5957 | 1.6786 | 6196 | 1.6139 | 6440 | 1.5527 | 6690 | 1.4947 | 6946 | 1.4397 | 13 |
| 48 | 5961 | 1.6775 | 6200 | 1.6128 | 6445 | 1.5517 | 6694 | 1.4938 | 6950 | 1.4388 | 12 |
| 49 | 5965 | 1.6764 | 6204 | 1.6118 | 6449 | 1.5507 | 6699 | 1.4928 | 6954 | 1.4379 | 11 |
| 50 | 5969 | 1.6753 | 6208 | 1.6107 | 6453 | 1.5497 | 6703 | 1.4919 | 6959 | 1.4370 | 10 |
| 51 | 5973 | 1.6742 | 6212 | 1.6097 | 6457 | 1.5487 | 6707 | 1.4910 | 6963 | 1.4361 | 9 |
| 52 | 5977 | 1.6731 | 6216 | 1.6087 | 6461 | 1.5477 | 6711 | 1.4900 | 6967 | 1.4352 | 8 |
| 53 | 5981 | 1.6720 | 6220 | 1.6076 | 6465 | 1.5468 | 6716 | 1.4891 | 6972 | 1.4344 | 7 |
| 54 | 5985 | 1.6709 | 6224 | 1.6066 | 6469 | 1.5458 | 6720 | 1.4882 | 6976 | 1.4335 | 6 |
| 55 | 5989 | 1.6698 | 6228 | 1.6055 | 6473 | 1.5448 | 6724 | 1.4872 | 6980 | 1.4326 | 5 |
| 56 | 5993 | 1.6687 | 6233 | 1.6045 | 6478 | 1.5438 | 6728 | 1.4863 | 6985 | 1.4317 | 4 |
| 57 | 5997 | 1.6676 | 6237 | 1.6034 | 6482 | 1.5428 | 6732 | 1.4854 | 6989 | 1.4308 | 3 |
| 58 | 6001 | 1.6665 | 6241 | 1.6024 | 6486 | 1.5418 | 6737 | 1.4844 | 6993 | 1.4299 | 2 |
| 59 | 6005 | 1.6654 | 6245 | 1.6014 | 6490 | 1.5408 | 6741 | 1.4835 | 6998 | 1.4290 | 1 |
| 60 | 6009 | 1.6643 | 6249 | 1.6003 | 6494 | 1.5399 | 6745 | 1.4826 | 7002 | 1.4281 | 0 |
| | cot | tan | cot | tan | cot | tan | cot | tan | cot | tan | |
| ′ | 59° | | 58° | | 57° | | 56° | | 55° | | ′ |

| ′ | 35° tan | cot | 36° tan | cot | 37° tan | cot | 38° tan | cot | 39° tan | cot | ′ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 7002 | 1.4281 | 7265 | 1.3764 | 7536 | 1.3270 | 7813 | 1.2799 | 8098 | 1.2349 | 60 |
| 1 | 7006 | 1.4273 | 7270 | 1.3755 | 7540 | 1.3262 | 7818 | 1.2792 | 8103 | 1.2342 | 59 |
| 2 | 7011 | 1.4264 | 7274 | 1.3747 | 7545 | 1.3254 | 7822 | 1.2784 | 8107 | 1.2334 | 58 |
| 3 | 7015 | 1.4255 | 7279 | 1.3739 | 7549 | 1.3246 | 7827 | 1.2776 | 8112 | 1.2327 | 57 |
| 4 | 7019 | 1.4246 | 7283 | 1.3730 | 7554 | 1.3238 | 7832 | 1.2769 | 8117 | 1.2320 | 56 |
| 5 | 7024 | 1.4237 | 7288 | 1.3722 | 7558 | 1.3230 | 7836 | 1.2761 | 8122 | 1.2312 | 55 |
| 6 | 7028 | 1.4229 | 7292 | 1.3713 | 7563 | 1.3222 | 7841 | 1.2753 | 8127 | 1.2305 | 54 |
| 7 | 7032 | 1.4220 | 7297 | 1.3705 | 7568 | 1.3214 | 7846 | 1.2746 | 8132 | 1.2298 | 53 |
| 8 | 7037 | 1.4211 | 7301 | 1.3697 | 7572 | 1.3206 | 7850 | 1.2738 | 8136 | 1.2290 | 52 |
| 9 | 7041 | 1.4202 | 7306 | 1.3688 | 7577 | 1.3198 | 7855 | 1.2731 | 8141 | 1.2283 | 51 |
| 10 | 7046 | 1.4193 | 7310 | 1.3680 | 7581 | 1.3190 | 7860 | 1.2723 | 8146 | 1.2276 | 50 |
| 11 | 7050 | 1.4185 | 7314 | 1.3672 | 7586 | 1.3182 | 7865 | 1.2715 | 8151 | 1.2268 | 49 |
| 12 | 7054 | 1.4176 | 7319 | 1.3663 | 7590 | 1.3175 | 7869 | 1.2708 | 8156 | 1.2261 | 48 |
| 13 | 7059 | 1.4167 | 7323 | 1.3655 | 7595 | 1.3167 | 7874 | 1.2700 | 8161 | 1.2254 | 47 |
| 14 | 7063 | 1.4158 | 7328 | 1.3647 | 7600 | 1.3159 | 7879 | 1.2693 | 8165 | 1.2247 | 46 |
| 15 | 7067 | 1.4150 | 7332 | 1.3638 | 7604 | 1.3151 | 7883 | 1.2685 | 8170 | 1.2239 | 45 |
| 16 | 7072 | 1.4141 | 7337 | 1.3630 | 7609 | 1.3143 | 7888 | 1.2677 | 8175 | 1.2232 | 44 |
| 17 | 7076 | 1.4132 | 7341 | 1.3622 | 7613 | 1.3135 | 7893 | 1.2670 | 8180 | 1.2225 | 43 |
| 18 | 7080 | 1.4124 | 7346 | 1.3613 | 7618 | 1.3127 | 7898 | 1.2662 | 8185 | 1.2218 | 42 |
| 19 | 7085 | 1.4115 | 7350 | 1.3605 | 7623 | 1.3119 | 7902 | 1.2655 | 8190 | 1.2210 | 41 |
| 20 | 7089 | 1.4106 | 7355 | 1.3597 | 7627 | 1.3111 | 7907 | 1.2647 | 8195 | 1.2203 | 40 |
| 21 | 7094 | 1.4097 | 7359 | 1.3588 | 7632 | 1.3103 | 7912 | 1.2640 | 8199 | 1.2196 | 39 |
| 22 | 7098 | 1.4089 | 7364 | 1.3580 | 7636 | 1.3095 | 7916 | 1.2632 | 8204 | 1.2189 | 38 |
| 23 | 7102 | 1.4080 | 7368 | 1.3572 | 7641 | 1.3087 | 7921 | 1.2624 | 8209 | 1.2181 | 37 |
| 24 | 7107 | 1.4071 | 7373 | 1.3564 | 7646 | 1.3079 | 7926 | 1.2617 | 8214 | 1.2174 | 36 |
| 25 | 7111 | 1.4063 | 7377 | 1.3555 | 7650 | 1.3072 | 7931 | 1.2609 | 8219 | 1.2167 | 35 |
| 26 | 7115 | 1.4054 | 7382 | 1.3547 | 7655 | 1.3064 | 7935 | 1.2602 | 8224 | 1.2160 | 34 |
| 27 | 7120 | 1.4045 | 7386 | 1.3539 | 7659 | 1.3056 | 7940 | 1.2594 | 8229 | 1.2153 | 33 |
| 28 | 7124 | 1.4037 | 7391 | 1.3531 | 7664 | 1.3048 | 7945 | 1.2587 | 8234 | 1.2145 | 32 |
| 29 | 7129 | 1.4028 | 7395 | 1.3522 | 7669 | 1.3040 | 7950 | 1.2579 | 8238 | 1.2138 | 31 |
| 30 | 7133 | 1.4019 | 7400 | 1.3514 | 7673 | 1.3032 | 7954 | 1.2572 | 8243 | 1.2131 | 30 |
| 31 | 7137 | 1.4011 | 7404 | 1.3506 | 7678 | 1.3024 | 7959 | 1.2564 | 8248 | 1.2124 | 29 |
| 32 | 7142 | 1.4002 | 7409 | 1.3498 | 7683 | 1.3017 | 7964 | 1.2557 | 8253 | 1.2117 | 28 |
| 33 | 7146 | 1.3994 | 7413 | 1.3490 | 7687 | 1.3009 | 7969 | 1.2549 | 8258 | 1.2109 | 27 |
| 34 | 7151 | 1.3985 | 7418 | 1.3481 | 7692 | 1.3001 | 7973 | 1.2542 | 8263 | 1.2102 | 26 |
| 35 | 7155 | 1.3976 | 7422 | 1.3473 | 7696 | 1.2993 | 7978 | 1.2534 | 8268 | 1.2095 | 25 |
| 36 | 7159 | 1.3968 | 7427 | 1.3465 | 7701 | 1.2985 | 7983 | 1.2527 | 8273 | 1.2088 | 24 |
| 37 | 7164 | 1.3959 | 7431 | 1.3457 | 7706 | 1.2977 | 7988 | 1.2519 | 8278 | 1.2081 | 23 |
| 38 | 7168 | 1.3951 | 7436 | 1.3449 | 7710 | 1.2970 | 7992 | 1.2512 | 8283 | 1.2074 | 22 |
| 39 | 7173 | 1.3942 | 7440 | 1.3440 | 7715 | 1.2962 | 7997 | 1.2504 | 8287 | 1.2066 | 21 |
| 40 | 7177 | 1.3934 | 7445 | 1.3432 | 7720 | 1.2954 | 8002 | 1.2497 | 8292 | 1.2059 | 20 |
| 41 | 7181 | 1.3925 | 7449 | 1.3424 | 7724 | 1.2946 | 8007 | 1.2489 | 8297 | 1.2052 | 19 |
| 42 | 7186 | 1.3916 | 7454 | 1.3416 | 7729 | 1.2938 | 8012 | 1.2482 | 8302 | 1.2045 | 18 |
| 43 | 7190 | 1.3908 | 7458 | 1.3408 | 7734 | 1.2931 | 8016 | 1.2475 | 8307 | 1.2038 | 17 |
| 44 | 7195 | 1.3899 | 7463 | 1.3400 | 7738 | 1.2923 | 8021 | 1.2467 | 8312 | 1.2031 | 16 |
| 45 | 7199 | 1.3891 | 7467 | 1.3392 | 7743 | 1.2915 | 8026 | 1.2460 | 8317 | 1.2024 | 15 |
| 46 | 7203 | 1.3882 | 7472 | 1.3384 | 7747 | 1.2907 | 8031 | 1.2452 | 8322 | 1.2017 | 14 |
| 47 | 7208 | 1.3874 | 7476 | 1.3375 | 7752 | 1.2900 | 8035 | 1.2445 | 8327 | 1.2009 | 13 |
| 48 | 7212 | 1.3865 | 7481 | 1.3367 | 7757 | 1.2892 | 8040 | 1.2437 | 8332 | 1.2002 | 12 |
| 49 | 7217 | 1.3857 | 7485 | 1.3359 | 7761 | 1.2884 | 8045 | 1.2430 | 8337 | 1.1995 | 11 |
| 50 | 7221 | 1.3848 | 7490 | 1.3351 | 7766 | 1.2876 | 8050 | 1.2423 | 8342 | 1.1988 | 10 |
| 51 | 7226 | 1.3840 | 7495 | 1.3343 | 7771 | 1.2869 | 8055 | 1.2415 | 8346 | 1.1981 | 9 |
| 52 | 7230 | 1.3831 | 7499 | 1.3335 | 7775 | 1.2861 | 8059 | 1.2408 | 8351 | 1.1974 | 8 |
| 53 | 7234 | 1.3823 | 7504 | 1.3327 | 7780 | 1.2853 | 8064 | 1.2401 | 8356 | 1.1967 | 7 |
| 54 | 7239 | 1.3814 | 7508 | 1.3319 | 7785 | 1.2846 | 8069 | 1.2393 | 8361 | 1.1960 | 6 |
| 55 | 7243 | 1.3806 | 7513 | 1.3311 | 7789 | 1.2838 | 8074 | 1.2386 | 8366 | 1.1953 | 5 |
| 56 | 7248 | 1.3798 | 7517 | 1.3303 | 7794 | 1.2830 | 8079 | 1.2378 | 8371 | 1.1946 | 4 |
| 57 | 7252 | 1.3789 | 7522 | 1.3295 | 7799 | 1.2822 | 8083 | 1.2371 | 8376 | 1.1939 | 3 |
| 58 | 7257 | 1.3781 | 7526 | 1.3287 | 7803 | 1.2815 | 8088 | 1.2364 | 8381 | 1.1932 | 2 |
| 59 | 7261 | 1.3772 | 7531 | 1.3278 | 7808 | 1.2807 | 8093 | 1.2356 | 8386 | 1.1925 | 1 |
| 60 | 7265 | 1.3764 | 7536 | 1.3270 | 7813 | 1.2799 | 8098 | 1.2349 | 8391 | 1.1918 | 0 |
| | cot | tan | cot | tan | cot | tan | cot | tan | cot | tan | ′ |
| | 54° | | 53° | | 52° | | 51° | | 50° | | |

| ′ | 40° tan | cot | 41° tan | cot | 42° tan | cot | 43° tan | cot | 44° tan | cot | ′ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 8391 | 1.1918 | 8693 | 1.1504 | 9004 | 1.1106 | 9325 | 1.0724 | 9657 | 1.0355 | 60 |
| 1 | 8396 | 1.1910 | 8698 | 1.1497 | 9009 | 1.1100 | 9331 | 1.0717 | 9663 | 1.0349 | 59 |
| 2 | 8401 | 1.1903 | 8703 | 1.1490 | 9015 | 1.1093 | 9336 | 1.0711 | 9668 | 1.0343 | 58 |
| 3 | 8406 | 1.1896 | 8708 | 1.1483 | 9020 | 1.1087 | 9341 | 1.0705 | 9674 | 1.0337 | 57 |
| 4 | 8411 | 1.1889 | 8713 | 1.1477 | 9025 | 1.1080 | 9347 | 1.0699 | 9679 | 1.0331 | 56 |
| 5 | 8416 | 1.1882 | 8718 | 1.1470 | 9030 | 1.1074 | 9352 | 1.0692 | 9685 | 1.0325 | 55 |
| 6 | 8421 | 1.1875 | 8724 | 1.1463 | 9036 | 1.1067 | 9358 | 1.0686 | 9691 | 1.0319 | 54 |
| 7 | 8426 | 1.1868 | 8729 | 1.1456 | 9041 | 1.1061 | 9363 | 1.0680 | 9696 | 1.0313 | 53 |
| 8 | 8431 | 1.1861 | 8734 | 1.1450 | 9046 | 1.1054 | 9369 | 1.0674 | 9702 | 1.0307 | 52 |
| 9 | 8436 | 1.1854 | 8739 | 1.1443 | 9052 | 1.1048 | 9374 | 1.0668 | 9708 | 1.0301 | 51 |
| 10 | 8441 | 1.1847 | 8744 | 1.1436 | 9057 | 1.1041 | 9380 | 1.0661 | 9713 | 1.0295 | 50 |
| 11 | 8446 | 1.1840 | 8749 | 1.1430 | 9062 | 1.1035 | 9385 | 1.0655 | 9719 | 1.0289 | 49 |
| 12 | 8451 | 1.1833 | 8754 | 1.1423 | 9067 | 1.1028 | 9391 | 1.0649 | 9725 | 1.0283 | 48 |
| 13 | 8456 | 1.1826 | 8759 | 1.1416 | 9073 | 1.1022 | 9396 | 1.0643 | 9730 | 1.0277 | 47 |
| 14 | 8461 | 1.1819 | 8765 | 1.1410 | 9078 | 1.1016 | 9402 | 1.0637 | 9736 | 1.0271 | 46 |
| 15 | 8466 | 1.1812 | 8770 | 1.1403 | 9083 | 1.1009 | 9407 | 1.0630 | 9742 | 1.0265 | 45 |
| 16 | 8471 | 1.1806 | 8775 | 1.1396 | 9089 | 1.1003 | 9413 | 1.0624 | 9747 | 1.0259 | 44 |
| 17 | 8476 | 1.1799 | 8780 | 1.1389 | 9094 | 1.0996 | 9418 | 1.0618 | 9753 | 1.0253 | 43 |
| 18 | 8481 | 1.1792 | 8785 | 1.1383 | 9099 | 1.0990 | 9424 | 1.0612 | 9759 | 1.0247 | 42 |
| 19 | 8486 | 1.1785 | 8790 | 1.1376 | 9105 | 1.0983 | 9429 | 1.0606 | 9764 | 1.0241 | 41 |
| 20 | 8491 | 1.1778 | 8796 | 1.1369 | 9110 | 1.0977 | 9435 | 1.0599 | 9770 | 1.0235 | 40 |
| 21 | 8496 | 1.1771 | 8801 | 1.1363 | 9115 | 1.0971 | 9440 | 1.0593 | 9776 | 1.0230 | 39 |
| 22 | 8501 | 1.1764 | 8806 | 1.1356 | 9121 | 1.0964 | 9446 | 1.0587 | 9781 | 1.0224 | 38 |
| 23 | 8506 | 1.1757 | 8811 | 1.1349 | 9126 | 1.0958 | 9451 | 1.0581 | 9787 | 1.0218 | 37 |
| 24 | 8511 | 1.1750 | 8816 | 1.1343 | 9131 | 1.0951 | 9457 | 1.0575 | 9793 | 1.0212 | 36 |
| 25 | 8516 | 1.1743 | 8821 | 1.1336 | 9137 | 1.0945 | 9462 | 1.0569 | 9798 | 1.0206 | 35 |
| 26 | 8521 | 1.1736 | 8827 | 1.1329 | 9142 | 1.0939 | 9468 | 1.0562 | 9804 | 1.0200 | 34 |
| 27 | 8526 | 1.1729 | 8832 | 1.1323 | 9147 | 1.0932 | 9473 | 1.0556 | 9810 | 1.0194 | 33 |
| 28 | 8531 | 1.1722 | 8837 | 1.1316 | 9153 | 1.0926 | 9479 | 1.0550 | 9816 | 1.0188 | 32 |
| 29 | 8536 | 1.1715 | 8842 | 1.1310 | 9158 | 1.0919 | 9484 | 1.0544 | 9821 | 1.0182 | 31 |
| 30 | 8541 | 1.1708 | 8847 | 1.1303 | 9163 | 1.0913 | 9490 | 1.0538 | 9827 | 1.0176 | 30 |
| 31 | 8546 | 1.1702 | 8852 | 1.1296 | 9169 | 1.0907 | 9495 | 1.0532 | 9833 | 1.0170 | 29 |
| 32 | 8551 | 1.1695 | 8858 | 1.1290 | 9174 | 1.0900 | 9501 | 1.0526 | 9838 | 1.0164 | 28 |
| 33 | 8556 | 1.1688 | 8863 | 1.1283 | 9179 | 1.0894 | 9506 | 1.0519 | 9844 | 1.0158 | 27 |
| 34 | 8561 | 1.1681 | 8868 | 1.1276 | 9185 | 1.0888 | 9512 | 1.0513 | 9850 | 1.0152 | 26 |
| 35 | 8566 | 1.1674 | 8873 | 1.1270 | 9190 | 1.0881 | 9517 | 1.0507 | 9856 | 1.0147 | 25 |
| 36 | 8571 | 1.1667 | 8878 | 1.1263 | 9195 | 1.0875 | 9523 | 1.0501 | 9861 | 1.0141 | 24 |
| 37 | 8576 | 1.1660 | 8884 | 1.1257 | 9201 | 1.0869 | 9528 | 1.0495 | 9867 | 1.0135 | 23 |
| 38 | 8581 | 1.1653 | 8889 | 1.1250 | 9206 | 1.0862 | 9534 | 1.0489 | 9873 | 1.0129 | 22 |
| 39 | 8586 | 1.1647 | 8894 | 1.1243 | 9212 | 1.0856 | 9540 | 1.0483 | 9879 | 1.0123 | 21 |
| 40 | 8591 | 1.1640 | 8899 | 1.1237 | 9217 | 1.0850 | 9545 | 1.0477 | 9884 | 1.0117 | 20 |
| 41 | 8596 | 1.1633 | 8904 | 1.1230 | 9222 | 1.0843 | 9551 | 1.0470 | 9890 | 1.0111 | 19 |
| 42 | 8601 | 1.1626 | 8910 | 1.1224 | 9228 | 1.0837 | 9556 | 1.0464 | 9896 | 1.0105 | 18 |
| 43 | 8606 | 1.1619 | 8915 | 1.1217 | 9233 | 1.0831 | 9562 | 1.0458 | 9902 | 1.0099 | 17 |
| 44 | 8611 | 1.1612 | 8920 | 1.1211 | 9239 | 1.0824 | 9567 | 1.0452 | 9907 | 1.0094 | 16 |
| 45 | 8617 | 1.1606 | 8925 | 1.1204 | 9244 | 1.0818 | 9573 | 1.0446 | 9913 | 1.0088 | 15 |
| 46 | 8622 | 1.1599 | 8931 | 1.1197 | 9249 | 1.0812 | 9578 | 1.0440 | 9919 | 1.0082 | 14 |
| 47 | 8627 | 1.1592 | 8936 | 1.1191 | 9255 | 1.0805 | 9584 | 1.0434 | 9925 | 1.0076 | 13 |
| 48 | 8632 | 1.1585 | 8941 | 1.1184 | 9260 | 1.0799 | 9590 | 1.0428 | 9930 | 1.0070 | 12 |
| 49 | 8637 | 1.1578 | 8946 | 1.1178 | 9266 | 1.0793 | 9595 | 1.0422 | 9936 | 1.0064 | 11 |
| 50 | 8642 | 1.1571 | 8952 | 1.1171 | 9271 | 1.0786 | 9601 | 1.0416 | 9942 | 1.0058 | 10 |
| 51 | 8647 | 1.1565 | 8957 | 1.1165 | 9276 | 1.0780 | 9606 | 1.0410 | 9948 | 1.0052 | 9 |
| 52 | 8652 | 1.1558 | 8962 | 1.1158 | 9282 | 1.0774 | 9612 | 1.0404 | 9954 | 1.0047 | 8 |
| 53 | 8657 | 1.1551 | 8967 | 1.1152 | 9287 | 1.0768 | 9618 | 1.0398 | 9959 | 1.0041 | 7 |
| 54 | 8662 | 1.1544 | 8972 | 1.1145 | 9293 | 1.0761 | 9623 | 1.0392 | 9965 | 1.0035 | 6 |
| 55 | 8667 | 1.1538 | 8978 | 1.1139 | 9298 | 1.0755 | 9629 | 1.0385 | 9971 | 1.0029 | 5 |
| 56 | 8672 | 1.1531 | 8983 | 1.1132 | 9303 | 1.0749 | 9634 | 1.0379 | 9977 | 1.0023 | 4 |
| 57 | 8678 | 1.1524 | 8988 | 1.1126 | 9309 | 1.0742 | 9640 | 1.0373 | 9983 | 1.0017 | 3 |
| 58 | 8683 | 1.1517 | 8994 | 1.1119 | 9314 | 1.0736 | 9646 | 1.0367 | 9988 | 1.0012 | 2 |
| 59 | 8688 | 1.1510 | 8999 | 1.1113 | 9320 | 1.0730 | 9651 | 1.0361 | 9994 | 1.0006 | 1 |
| 60 | 8693 | 1.1504 | 9004 | 1.1106 | 9325 | 1.0724 | 9657 | 1.0355 | 1000 | 1.0000 | 0 |
| | cot | tan | cot | tan | cot | tan | cot | tan | cot | tan | |
| ′ | 49° | | 48° | | 47° | | 46° | | 45° | | ′ |

| Bearing. | Distance 1. | | Distance 2. | | Distance 3. | | Distance 4. | | Distance 5. | | Bearing. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| o ′ | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | o ′ |
| 0 15 | 1.000 | 0.004 | 2.000 | 0.009 | 3.000 | 0.013 | 4.000 | 0.017 | 5.000 | 0.022 | 89 45 |
| 30 | 1.000 | 0.009 | 2.000 | 0.017 | 3.000 | 0.026 | 4.000 | 0.035 | 5.000 | 0.044 | 30 |
| 45 | 1.000 | 0.013 | 2.000 | 0.026 | 3.000 | 0.039 | 4.000 | 0.052 | 5.000 | 0.065 | 15 |
| 1 0 | 1.000 | 0.017 | 2.000 | 0.035 | 3.000 | 0.052 | 3.999 | 0.070 | 4.999 | 0.087 | 89 0 |
| 15 | 1.000 | 0.022 | 2.000 | 0.044 | 2.999 | 0.065 | 3.999 | 0.087 | 4.999 | 0.109 | 45 |
| 30 | 1.000 | 0.026 | 1.999 | 0.052 | 2.999 | 0.079 | 3.999 | 0.105 | 4.998 | 0.131 | 30 |
| 45 | 1.000 | 0.031 | 1.999 | 0.061 | 2.999 | 0.092 | 3.998 | 0.122 | 4.998 | 0.153 | 15 |
| 2 0 | 0.999 | 0.035 | 1.999 | 0.070 | 2.998 | 0.105 | 3.998 | 0.140 | 4.997 | 0.174 | 88 0 |
| 15 | 0.999 | 0.039 | 1.998 | 0.079 | 2.998 | 0.118 | 3.997 | 0.157 | 4.996 | 0.196 | 45 |
| 30 | 0.999 | 0.044 | 1.998 | 0.087 | 2.997 | 0.131 | 3.996 | 0.174 | 4.995 | 0.218 | 30 |
| 45 | 0.999 | 0.048 | 1.998 | 0.096 | 2.997 | 0.144 | 3.995 | 0.192 | 4.994 | 0.240 | 15 |
| 3 0 | 0.999 | 0.052 | 1.997 | 0.105 | 2.996 | 0.157 | 3.995 | 0.209 | 4.993 | 0.262 | 87 0 |
| 15 | 0.998 | 0.057 | 1.997 | 0.113 | 2.995 | 0.170 | 3.994 | 0.227 | 4.992 | 0.283 | 45 |
| 30 | 0.998 | 0.061 | 1.996 | 0.122 | 2.994 | 0.183 | 3.993 | 0.244 | 4.991 | 0.305 | 30 |
| 45 | 0.998 | 0.065 | 1.996 | 0.131 | 2.994 | 0.196 | 3.991 | 0.262 | 4.989 | 0.327 | 15 |
| 4 0 | 0.998 | 0.070 | 1.995 | 0.140 | 2.993 | 0.209 | 3.990 | 0.279 | 4.988 | 0.349 | 86 0 |
| 15 | 0.997 | 0.074 | 1.995 | 0.148 | 2.992 | 0.222 | 3.989 | 0.296 | 4.986 | 0.371 | 45 |
| 30 | 0.997 | 0.078 | 1.994 | 0.157 | 2.991 | 0.235 | 3.988 | 0.314 | 4.985 | 0.392 | 30 |
| 45 | 0.997 | 0.083 | 1.993 | 0.166 | 2.990 | 0.248 | 3.986 | 0.331 | 4.983 | 0.414 | 15 |
| 5 0 | 0.996 | 0.087 | 1.992 | 0.174 | 2.989 | 0.261 | 3.985 | 0.349 | 4.981 | 0.436 | 85 0 |
| 15 | 0.996 | 0.092 | 1.992 | 0.183 | 2.987 | 0.275 | 3.983 | 0.366 | 4.979 | 0.458 | 45 |
| 30 | 0.995 | 0.096 | 1.991 | 0.192 | 2.986 | 0.288 | 3.982 | 0.383 | 4.977 | 0.479 | 30 |
| 45 | 0.995 | 0.100 | 1.990 | 0.200 | 2.985 | 0.301 | 3.980 | 0.401 | 4.975 | 0.501 | 15 |
| 6 0 | 0.995 | 0.105 | 1.989 | 0.209 | 2.984 | 0.314 | 3.978 | 0.418 | 4.973 | 0.523 | 84 0 |
| 15 | 0.994 | 0.109 | 1.988 | 0.218 | 2.982 | 0.327 | 3.976 | 0.435 | 4.970 | 0.544 | 45 |
| 30 | 0.994 | 0.113 | 1.987 | 0.226 | 2.981 | 0.340 | 3.974 | 0.453 | 4.968 | 0 566 | 30 |
| 45 | 0.993 | 0.118 | 1.986 | 0.235 | 2.979 | 0.353 | 3.972 | 0.470 | 4.965 | 0.588 | 15 |
| 7 0 | 0.993 | 0.122 | 1.985 | 0.244 | 2.978 | 0.366 | 3.970 | 0.487 | 4.963 | 0.609 | 83 0 |
| 15 | 0.992 | 0.126 | 1.984 | 0.252 | 2.976 | 0.379 | 3.968 | 0.505 | 4.960 | 0.631 | 45 |
| 30 | 0.991 | 0.131 | 1.983 | 0.261 | 2.974 | 0.392 | 3.966 | 0.522 | 4.957 | 0.653 | 30 |
| 45 | 0.991 | 0.135 | 1.982 | 0.270 | 2.973 | 0.405 | 3.963 | 0.539 | 4.954 | 0.674 | 15 |
| 8 0 | 0.990 | 0.139 | 1.981 | 0.278 | 2.971 | 0.418 | 3.961 | 0.557 | 4.951 | 0.696 | 82 0 |
| 15 | 0.990 | 0.143 | 1.979 | 0.287 | 2.969 | 0.430 | 3.959 | 0.574 | 4.948 | 0.717 | 45 |
| 30 | 0.989 | 0.148 | 1.978 | 0.296 | 2.967 | 0.443 | 3.956 | 0.591 | 4.945 | 0.739 | 30 |
| 45 | 0.988 | 0.152 | 1.977 | 0.304 | 2.965 | 0.456 | 3.953 | 0.608 | 4.942 | 0.761 | 15 |
| 9 0 | 0.988 | 0.156 | 1.975 | 0.313 | 2.963 | 0.469 | 3.951 | 0.626 | 4.938 | 0.782 | 81 0 |
| 15 | 0.987 | 0.161 | 1.974 | 0.321 | 2.961 | 0.482 | 3.948 | 0.643 | 4.935 | 0.804 | 45 |
| 30 | 0.986 | 0.165 | 1.973 | 0.330 | 2.959 | 0.495 | 3.945 | 0.660 | 4.931 | 0.825 | 30 |
| 45 | 0.986 | 0.169 | 1.971 | 0.339 | 2.957 | 0.508 | 3.942 | 0.677 | 4.928 | 0.847 | 15 |
| 10 0 | 0.985 | 0.174 | 1.970 | 0.347 | 2.954 | 0.521 | 3.939 | 0.695 | 4.924 | 0.868 | 80 0 |
| 15 | 0.984 | 0.178 | 1.968 | 0.356 | 2.952 | 0.534 | 3.936 | 0.712 | 4.920 | 0.890 | 45 |
| 30 | 0.983 | 0.182 | 1.967 | 0.364 | 2.950 | 0.547 | 3.933 | 0.729 | 4.916 | 0.911 | 30 |
| 45 | 0.982 | 0.187 | 1.965 | 0.373 | 2.947 | 0.560 | 3.930 | 0.746 | 4.912 | 0.933 | 15 |
| 11 0 | 0.982 | 0.191 | 1.963 | 0.382 | 2.945 | 0.572 | 3.927 | 0.763 | 4.908 | 0.954 | 79 0 |
| 15 | 0.981 | 0.195 | 1.962 | 0.390 | 2.942 | 0.585 | 3.923 | 0.780 | 4.904 | 0.975 | 45 |
| 30 | 0.980 | 0.199 | 1.960 | 0.399 | 2.940 | 0.598 | 3.920 | 0.797 | 4.900 | 0.997 | 30 |
| 45 | 0.979 | 0.204 | 1.958 | 0.407 | 2.937 | 0.611 | 3.916 | 0.815 | 4.895 | 1.018 | 15 |
| 12 0 | 0.978 | 0.208 | 1.956 | 0.416 | 2.934 | 0.624 | 3.913 | 0.832 | 4.891 | 1.040 | 78 0 |
| 15 | 0.977 | 0.212 | 1.954 | 0.424 | 2.932 | 0.637 | 3.909 | 0.849 | 4.886 | 1.061 | 45 |
| 30 | 0.976 | 0.216 | 1.953 | 0.433 | 2.929 | 0.649 | 3.905 | 0.866 | 4.881 | 1.082 | 30 |
| 45 | 0.975 | 0.221 | 1.951 | 0.441 | 2.926 | 0.662 | 3.901 | 0.883 | 4.877 | 1.103 | 15 |
| 13 0 | 0.974 | 0.225 | 1.949 | 0.450 | 2.923 | 0.675 | 3.897 | 0.900 | 4.872 | 1.125 | 77 0 |
| 15 | 0.973 | 0.229 | 1.947 | 0.458 | 2.920 | 0.688 | 3.894 | 0.917 | 4.867 | 1.146 | 45 |
| 30 | 0.972 | 0.233 | 1.945 | 0.467 | 2.917 | 0.700 | 3.889 | 0.934 | 4.862 | 1.167 | 30 |
| 45 | 0.971 | 0.238 | 1.943 | 0.475 | 2.914 | 0.713 | 3.885 | 0.951 | 4.857 | 1.188 | 15 |
| 14 0 | 0.970 | 0.242 | 1.941 | 0.484 | 2.911 | 0.726 | 3.881 | 0.968 | 4.851 | 1.210 | 76 0 |
| 15 | 0.969 | 0.246 | 1.938 | 0.492 | 2.908 | 0.738 | 3.877 | 0.985 | 4.846 | 1.231 | 45 |
| 30 | 0.968 | 0.250 | 1.936 | 0.501 | 2.904 | 0.751 | 3.873 | 1.002 | 4.841 | 1.252 | 30 |
| 45 | 0.967 | 0.255 | 1.934 | 0.509 | 2.901 | 0.764 | 3.868 | 1.018 | 4.835 | 1.273 | 15 |
| 15 0 | 0.966 | 0.259 | 1.932 | 0.518 | 2.898 | 0.776 | 3.864 | 1.035 | 4.830 | 1.294 | 75 0 |
| o ′ | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | o ′ |
| Bearing. | Distance 1. | | Distance 2. | | Distance 3. | | Distance 4. | | Distance 5. | | Bearing. |

75°— 90°

| Bearing. | Distance 6. | | Distance 7. | | Distance 8. | | Distance 9. | | Distance 10. | | Bearing. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ° ′ | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | ° ′ |
| 0 15 | 6.000 | 0.026 | 7.000 | 0.031 | 8.000 | 0.035 | 9.000 | 0.039 | 10.000 | 0.044 | 89 45 |
| 30 | 6.000 | 0.052 | 7.000 | 0.061 | 8.000 | 0.070 | 9.000 | 0.079 | 10.000 | 0.087 | 30 |
| 45 | 5.999 | 0.079 | 6.999 | 0.092 | 7.999 | 0.105 | 8.999 | 0.118 | 9.999 | 0.131 | 15 |
| 1 0 | 5.999 | 0.105 | 6.999 | 0.122 | 7.999 | 0.140 | 8.999 | 0.157 | 9.999 | 0.175 | 89 0 |
| 15 | 5.999 | 0.131 | 6.998 | 0.153 | 7.998 | 0.175 | 8.998 | 0.196 | 9.998 | 0.218 | 45 |
| 30 | 5.998 | 0.157 | 6.998 | 0.183 | 7.997 | 0.209 | 8.997 | 0.236 | 9.997 | 0.262 | 30 |
| 45 | 5.997 | 0.183 | 6.997 | 0.214 | 7.996 | 0.244 | 8.996 | 0.275 | 9.995 | 0.305 | 15 |
| 2 0 | 5.996 | 0.209 | 6.996 | 0.244 | 7.995 | 0.279 | 8.995 | 0.314 | 9.994 | 0.349 | 88 0 |
| 15 | 5.995 | 0.236 | 6.995 | 0.275 | 7.994 | 0.314 | 8.993 | 0.353 | 9.992 | 0.393 | 45 |
| 30 | 5.994 | 0.262 | 6.993 | 0.305 | 7.992 | 0.349 | 8.991 | 0.393 | 9.991 | 0.436 | 30 |
| 45 | 5.993 | 0.288 | 6.992 | 0.336 | 7.991 | 0.384 | 8.990 | 0.432 | 9.989 | 0.480 | 15 |
| 3 0 | 5.992 | 0.314 | 6.990 | 0.366 | 7.989 | 0.419 | 8.988 | 0.471 | 9.986 | 0.523 | 87 0 |
| 15 | 5.990 | 0.340 | 6.989 | 0.397 | 7.987 | 0.454 | 8.986 | 0.510 | 9.984 | 0.567 | 45 |
| 30 | 5.989 | 0.366 | 6.987 | 0.427 | 7.985 | 0.488 | 8.983 | 0·549 | 9.981 | 0.611 | 30 |
| 45 | 5.987 | 0.392 | 6.985 | 0.458 | 7.983 | 0.523 | 8.981 | 0.589 | 9.979 | 0.654 | 15 |
| 4 0 | 5.985 | 0.419 | 6.983 | 0.488 | 7.981 | 0.558 | 8.978 | 0.628 | 9.976 | 0.698 | 86 0 |
| 15 | 5.984 | 0.445 | 6.981 | 0.519 | 7.978 | 0.593 | 8.975 | 0.667 | 9.973 | 0.741 | 45 |
| 30 | 5.982 | 0.471 | 6.978 | 0.549 | 7.975 | 0.628 | 8.972 | 0.706 | 9.969 | 0.785 | 30 |
| 45 | 5.979 | 0.497 | 6.976 | 0.580 | 7.973 | 0.662 | 8.969 | 0.745 | 9.966 | 0.828 | 15 |
| 5 0 | 5.977 | 0.523 | 6.973 | 0.610 | 7.970 | 0.697 | 8.966 | 0.784 | 9.962 | 0.872 | 85 0 |
| 15 | 5.975 | 0.549 | 6.971 | 0.641 | 7.966 | 0.732 | 8.962 | 0.824 | 9.958 | 0.915 | 45 |
| 30 | 5.972 | 0.575 | 6.968 | 0.671 | 7.963 | 0.767 | 8.959 | 0.863 | 9.954 | 0.959 | 30 |
| 45 | 5.970 | 0.601 | 6.965 | 0.701 | 7.960 | 0.802 | 8.955 | 0.902 | 9.950 | 1.002 | 15 |
| 6 0 | 5.967 | 0.627 | 6.962 | 0.732 | 7.956 | 0.836 | 8.951 | 0.941 | 9.945 | 1.045 | 84 0 |
| 15 | 5.964 | 0.653 | 6.958 | 0.762 | 7.952 | 0.871 | 8.947 | 0.980 | 9.941 | 1.089 | 45 |
| 30 | 5.961 | 0.679 | 6.955 | 0.792 | 7.949 | 0.906 | 8.942 | 1.019 | 9.936 | 1.132 | 30 |
| 45 | 5.958 | 0.705 | 6.951 | 0.823 | 7.945 | 0.940 | 8.938 | 1.058 | 9.931 | 1.175 | 15 |
| 7 0 | 5.955 | 0.731 | 6.948 | 0.853 | 7.940 | 0.975 | 8.933 | 1.097 | 9.926 | 1.219 | 83 0 |
| 15 | 5.952 | 0.757 | 6.944 | 0.883 | 7.936 | 1.010 | 8.928 | 1.136 | 9.920 | 1.262 | 45 |
| 30 | 5.949 | 0.783 | 6.940 | 0.914 | 7.932 | 1.044 | 8.923 | 1.175 | 9.914 | 1.305 | 30 |
| 45 | 5.945 | 0.809 | 6.936 | 0.944 | 7.927 | 1.079 | 8.918 | 1.214 | 9.909 | 1.349 | 15 |
| 8 0 | 5.942 | 0.835 | 6.932 | 0.974 | 7.922 | 1.113 | 8.912 | 1.253 | 9.903 | 1.392 | 82 0 |
| 15 | 5.938 | 0.861 | 6.928 | 1.004 | 7.917 | 1.148 | 8.907 | 1.291 | 9.897 | 1.435 | 45 |
| 30 | 5.934 | 0.887 | 6.923 | 1.035 | 7.912 | 1.182 | 8.901 | 1.330 | 9.890 | 1.478 | 30 |
| 45 | 5.930 | 0.913 | 6.919 | 1.065 | 7.907 | 1.217 | 8.895 | 1.369 | 9.884 | 1.521 | 15 |
| 9 0 | 5.926 | 0.939 | 6.914 | 1.095 | 7.902 | 1.251 | 8.889 | 1.408 | 9.877 | 1.564 | 81 0 |
| 15 | 5.922 | 0.964 | 6.909 | 1.125 | 7.896 | 1.286 | 8.883 | 1.447 | 9.870 | 1.607 | 45 |
| 30 | 5.918 | 0.990 | 6.904 | 1.155 | 7.890 | 1.320 | 8.877 | 1.485 | 9.863 | 1.651 | 30 |
| 45 | 5.913 | 1.016 | 6.899 | 1.185 | 7.884 | 1.355 | 8.870 | 1.524 | 9.856 | 1.694 | 15 |
| 10 0 | 5.909 | 1.042 | 6.894 | 1.216 | 7.878 | 1.389 | 8.863 | 1.563 | 9.848 | 1.737 | 80 0 |
| 15 | 5.904 | 1.068 | 6.888 | 1.246 | 7.872 | 1.424 | 8.856 | 1.601 | 9.840 | 1.779 | 45 |
| 30 | 5.900 | 1.093 | 6.883 | 1.276 | 7.866 | 1.458 | 8.849 | 1.640 | 9.833 | 1.822 | 30 |
| 45 | 5.895 | 1.119 | 6.877 | 1.306 | 7.860 | 1.492 | 8.842 | 1.679 | 9.825 | 1.865 | 15 |
| 11 0 | 5.890 | 1.145 | 6.871 | 1.336 | 7.853 | 1.526 | 8.835 | 1.717 | 9.816 | 1.908 | 79 0 |
| 15 | 5.885 | 1.171 | 6.866 | 1.366 | 7.846 | 1.561 | 8.827 | 1.756 | 9.808 | 1.951 | 45 |
| 30 | 5.880 | 1.196 | 6.859 | 1.396 | 7.839 | 1.595 | 8.819 | 1.794 | 9.799 | 1.994 | 30 |
| 45 | 5.874 | 1.222 | 6.853 | 1.425 | 7.832 | 1.629 | 8.811 | 1.833 | 9.791 | 2.036 | 15 |
| 12 0 | 5.869 | 1.247 | 6.847 | 1.455 | 7.825 | 1.663 | 8.803 | 1.871 | 9.782 | 2.079 | 78 0 |
| 15 | 5.863 | 1.273 | 6.841 | 1.485 | 7.818 | 1.697 | 8.795 | 1.910 | 9.772 | 2.122 | 45 |
| 30 | 5.858 | 1.299 | 6.834 | 1.515 | 7.810 | 1.732 | 8.787 | 1.948 | 9.763 | 2.164 | 30 |
| 45 | 5.852 | 1.324 | 6.827 | 1.545 | 7.803 | 1.766 | 8.778 | 1.986 | 9.753 | 2.207 | 15 |
| 13 0 | 5.846 | 1.350 | 6.821 | 1.575 | 7.795 | 1.800 | 8.769 | 2.025 | 9.744 | 2.250 | 77 0 |
| 15 | 5.840 | 1.375 | 6.814 | 1.604 | 7.787 | 1.834 | 8.760 | 2.063 | 9.734 | 2.292 | 45 |
| 30 | 5.834 | 1.401 | 6.807 | 1.634 | 7.779 | 1.868 | 8.751 | 2.101 | 9.724 | 2.335 | 30 |
| 45 | 5.828 | 1.426 | 6.799 | 1.664 | 7.771 | 1.902 | 8.742 | 2.139 | 9.713 | 2.377 | 15 |
| 14 0 | 5.822 | 1.452 | 6.792 | 1.693 | 7.762 | 1.935 | 8.733 | 2.177 | 9.703 | 2.419 | 76 0 |
| 15 | 5.815 | 1.477 | 6.785 | 1.723 | 7.754 | 1.969 | 8.723 | 2.215 | 9.692 | 2.462 | 45 |
| 30 | 5.809 | 1.502 | 6.777 | 1.753 | 7.745 | 2.003 | 8.713 | 2.253 | 9.682 | 2.504 | 30 |
| 45 | 5.802 | 1.528 | 6.769 | 1.782 | 7.736 | 2.037 | 8.703 | 2.291 | 9.671 | 2.546 | 15 |
| 15 0 | 5.796 | 1.553 | 6.761 | 1.812 | 7.727 | 2.071 | 8.693 | 2.329 | 9.659 | 2.588 | 75 0 |
| ° ′ | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | ° ′ |
| Bearing. | Distance 6. | | Distance 7. | | Distance 8. | | Distance 9. | | Distance 10. | | Bearing. |

| Bearing. | Distance 1. | | Distance 2. | | Distance 3. | | Distance 4. | | Distance 5. | | Bearing. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ° ′ | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | ° ′ |
| 15 15 | 0.965 | 0.263 | 1.930 | 0.526 | 2.894 | 0.789 | 3.859 | 1.052 | 4.824 | 1.315 | 74 45 |
| 30 | 0.964 | 0.267 | 1.927 | 0.534 | 2.891 | 0.802 | 3.855 | 1.069 | 4.818 | 1.336 | 30 |
| 45 | 0.962 | 0.271 | 1.925 | 0.543 | 2.887 | 0.814 | 3.850 | 1.086 | 4.812 | 1.357 | 15 |
| 16 0 | 0.961 | 0.276 | 1.923 | 0.551 | 2.884 | 0.827 | 3.845 | 1.103 | 4.806 | 1.378 | 74 0 |
| 15 | 0.960 | 0.280 | 1.920 | 0.560 | 2.880 | 0.839 | 3.840 | 1.119 | 4.800 | 1.399 | 45 |
| 30 | 0.959 | 0.284 | 1.918 | 0.568 | 2.876 | 0.852 | 3.835 | 1.136 | 4.794 | 1.420 | 30 |
| 45 | 0.958 | 0.288 | 1.915 | 0.576 | 2.873 | 0.865 | 3.830 | 1.153 | 4.788 | 1.441 | 15 |
| 17 0 | 0.956 | 0.292 | 1.913 | 0.585 | 2.869 | 0.877 | 3.825 | 1.169 | 4.782 | 1.462 | 73 0 |
| 15 | 0.955 | 0.297 | 1.910 | 0.593 | 2.865 | 0.890 | 3.820 | 1.186 | 4.775 | 1.483 | 45 |
| 30 | 0.954 | 0.301 | 1.907 | 0.601 | 2.861 | 0.902 | 3.815 | 1.203 | 4.769 | 1.504 | 30 |
| 45 | 0.952 | 0.305 | 1.905 | 0.610 | 2.857 | 0.915 | 3.810 | 1.220 | 4.762 | 1.524 | 15 |
| 18 0 | 0.951 | 0.309 | 1.902 | 0.618 | 2.853 | 0.927 | 3.804 | 1.236 | 4.755 | 1.545 | 72 0 |
| 15 | 0.950 | 0.313 | 1.899 | 0.626 | 2.849 | 0.939 | 3.799 | 1.253 | 4.748 | 1.566 | 45 |
| 30 | 0.948 | 0.317 | 1.897 | 0.635 | 2.845 | 0.952 | 3.793 | 1.269 | 4.742 | 1.587 | 30 |
| 45 | 0.947 | 0.321 | 1.894 | 0.643 | 2.841 | 0.964 | 3.788 | 1.286 | 4.735 | 1.607 | 15 |
| 19 0 | 0.946 | 0.326 | 1.891 | 0.651 | 2.837 | 0.977 | 3.782 | 1.302 | 4.728 | 1.628 | 71 0 |
| 15 | 0.944 | 0.330 | 1.888 | 0.659 | 2.832 | 0.989 | 3.776 | 1.319 | 4.720 | 1.648 | 45 |
| 30 | 0.943 | 0.334 | 1.885 | 0.668 | 2.828 | 1.001 | 3.771 | 1.335 | 4.713 | 1.669 | 30 |
| 45 | 0.941 | 0.338 | 1.882 | 0.676 | 2.824 | 1.014 | 3.765 | 1.352 | 4.706 | 1.690 | 15 |
| 20 0 | 0.940 | 0.342 | 1.879 | 0.684 | 2.819 | 1.026 | 3.759 | 1.368 | 4.698 | 1.710 | 70 0 |
| 15 | 0.938 | 0.346 | 1.876 | 0.692 | 2.815 | 1.038 | 3.753 | 1.384 | 4.691 | 1.731 | 45 |
| 30 | 0.937 | 0.350 | 1.873 | 0.700 | 2.810 | 1.051 | 3.747 | 1.401 | 4.683 | 1.751 | 30 |
| 45 | 0.935 | 0.354 | 1.870 | 0.709 | 2.805 | 1.063 | 3.741 | 1.417 | 4.676 | 1.771 | 15 |
| 21 0 | 0.934 | 0.358 | 1.867 | 0.717 | 2.801 | 1.075 | 3.734 | 1.433 | 4.668 | 1.792 | 69 0 |
| 15 | 0.932 | 0.362 | 1.864 | 0.725 | 2.796 | 1.087 | 3.728 | 1.450 | 4.660 | 1.812 | 45 |
| 30 | 0.930 | 0.367 | 1.861 | 0.733 | 2.791 | 1.100 | 3.722 | 1.466 | 4.652 | 1.833 | 30 |
| 45 | 0.929 | 0.371 | 1.858 | 0.741 | 2.786 | 1.112 | 3.715 | 1.482 | 4.644 | 1.853 | 15 |
| 22 0 | 0.927 | 0.375 | 1.854 | 0.749 | 2.782 | 1.124 | 3.709 | 1.498 | 4.636 | 1.873 | 68 0 |
| 15 | 0.926 | 0.379 | 1.851 | 0.757 | 2.777 | 1.136 | 3.702 | 1.515 | 4.628 | 1.893 | 45 |
| 30 | 0.924 | 0.383 | 1.848 | 0.765 | 2.772 | 1.148 | 3.696 | 1.531 | 4.619 | 1.913 | 30 |
| 45 | 0.922 | 0.387 | 1.844 | 0.773 | 2.767 | 1.160 | 3.689 | 1.547 | 4.611 | 1.934 | 15 |
| 23 0 | 0.921 | 0.391 | 1.841 | 0.781 | 2.762 | 1.172 | 3.682 | 1.563 | 4.603 | 1.954 | 67 0 |
| 15 | 0.919 | 0.395 | 1.838 | 0.789 | 2.756 | 1.184 | 3.675 | 1.579 | 4.594 | 1.974 | 45 |
| 30 | 0.917 | 0.399 | 1.834 | 0.797 | 2.751 | 1.196 | 3.668 | 1.595 | 4.585 | 1.994 | 30 |
| 45 | 0.915 | 0.403 | 1.831 | 0.805 | 2.746 | 1.208 | 3.661 | 1.611 | 4.577 | 2.014 | 15 |
| 24 0 | 0.914 | 0.407 | 1.827 | 0.813 | 2.741 | 1.220 | 3.654 | 1.627 | 4.568 | 2.034 | 66 0 |
| 15 | 0.912 | 0.411 | 1.824 | 0.821 | 2.735 | 1.232 | 3.647 | 1.643 | 4.559 | 2.054 | 45 |
| 30 | 0.910 | 0.415 | 1.820 | 0.829 | 2.730 | 1.244 | 3.640 | 1.659 | 4.550 | 2.073 | 30 |
| 45 | 0.908 | 0.419 | 1.816 | 0.837 | 2.724 | 1.256 | 3.633 | 1.675 | 4.541 | 2.093 | 15 |
| 25 0 | 0.906 | 0.423 | 1.813 | 0.845 | 2.719 | 1.268 | 3.625 | 1.690 | 4.532 | 2.113 | 65 0 |
| 15 | 0.904 | 0.427 | 1.809 | 0.853 | 2.713 | 1.280 | 3.618 | 1.706 | 4.522 | 2.133 | 45 |
| 30 | 0.903 | 0.431 | 1.805 | 0.861 | 2.708 | 1.292 | 3.610 | 1.722 | 4.513 | 2.153 | 30 |
| 45 | 0.901 | 0.434 | 1.801 | 0.869 | 2.702 | 1.303 | 3.603 | 1.738 | 4.503 | 2.172 | 15 |
| 26 0 | 0.899 | 0.438 | 1.798 | 0.877 | 2.696 | 1.315 | 3.595 | 1.753 | 4.494 | 2.192 | 64 0 |
| 15 | 0.897 | 0.442 | 1.794 | 0.885 | 2.691 | 1.327 | 3.587 | 1.769 | 4.484 | 2.211 | 45 |
| 30 | 0.895 | 0.446 | 1.790 | 0.892 | 2.685 | 1.339 | 3.580 | 1.785 | 4.475 | 2.231 | 30 |
| 45 | 0.893 | 0.450 | 1.786 | 0.900 | 2.679 | 1.350 | 3.572 | 1.800 | 4.465 | 2.250 | 15 |
| 27 0 | 0.891 | 0.454 | 1.782 | 0.908 | 2.673 | 1.362 | 3.564 | 1.816 | 4.455 | 2.270 | 63 0 |
| 15 | 0.889 | 0.458 | 1.778 | 0.916 | 2.667 | 1.374 | 3.556 | 1.831 | 4.445 | 2.289 | 45 |
| 30 | 0.887 | 0.462 | 1.774 | 0.923 | 2.661 | 1.385 | 3.548 | 1.847 | 4.435 | 2.309 | 30 |
| 45 | 0.885 | 0.466 | 1.770 | 0.931 | 2.655 | 1.397 | 3.540 | 1.862 | 4.425 | 2.328 | 15 |
| 28 0 | 0.883 | 0.469 | 1.766 | 0.939 | 2.649 | 1.408 | 3.532 | 1.878 | 4.415 | 2.347 | 62 0 |
| 15 | 0.881 | 0.473 | 1.762 | 0.947 | 2.643 | 1.420 | 3.524 | 1.893 | 4.404 | 2.367 | 45 |
| 30 | 0.879 | 0.477 | 1.758 | 0.954 | 2.636 | 1.431 | 3.515 | 1.909 | 4.394 | 2.386 | 30 |
| 45 | 0.877 | 0.481 | 1.753 | 0.962 | 2.630 | 1.443 | 3.507 | 1.924 | 4.384 | 2.405 | 15 |
| 29 0 | 0.875 | 0.485 | 1.749 | 0.970 | 2.624 | 1.454 | 3.498 | 1.939 | 4.373 | 2.424 | 61 0 |
| 15 | 0.872 | 0.489 | 1.745 | 0.977 | 2.617 | 1.466 | 3.490 | 1.954 | 4.362 | 2.443 | 45 |
| 30 | 0.870 | 0.492 | 1.741 | 0.985 | 2.611 | 1.477 | 3.481 | 1.970 | 4.352 | 2.462 | 30 |
| 45 | 0.868 | 0.496 | 1.736 | 0.992 | 2.605 | 1.489 | 3.473 | 1.985 | 4.341 | 2.481 | 15 |
| 30 0 | 0.866 | 0.500 | 1.732 | 1.000 | 2.598 | 1.500 | 3.464 | 2.000 | 4.330 | 2.500 | 60 0 |
| ° ′ | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | ° ′ |
| Bearing. | Distance 1. | | Distance 2. | | Distance 3. | | Distance 4. | | Distance 5. | | Bearing. |

| Bearing. | Distance 6. | | Distance 7. | | Distance 8. | | Distance 9. | | Distance 10. | | Bearing. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ° ′ | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | ° ′ |
| 15 15 | 5.789 | 1.578 | 6.754 | 1.841 | 7.718 | 2.104 | 8.683 | 2.367 | 9.648 | 2.630 | 74 45 |
| 30 | 5.782 | 1.603 | 6.745 | 1.871 | 7.709 | 2.138 | 8.673 | 2.405 | 9.636 | 2.672 | 30 |
| 45 | 5.775 | 1.629 | 6.737 | 1.900 | 7.700 | 2.172 | 8.662 | 2.443 | 9.625 | 2.714 | 15 |
| 16 0 | 5.768 | 1.654 | 6.729 | 1.929 | 7.690 | 2.205 | 8.651 | 2.481 | 9.613 | 2.756 | 74 0 |
| 15 | 5.760 | 1.679 | 6.720 | 1.959 | 7.680 | 2.239 | 8.640 | 2.518 | 9.601 | 2.798 | 45 |
| 30 | 5.753 | 1.704 | 6.712 | 1.988 | 7.671 | 2.272 | 8.629 | 2.556 | 9.588 | 2.840 | 30 |
| 45 | 5.745 | 1.729 | 6.703 | 2.017 | 7.661 | 2.306 | 8.618 | 2.594 | 9.576 | 2.882 | 15 |
| 17 0 | 5.738 | 1.754 | 6.694 | 2.047 | 7.650 | 2.339 | 8.607 | 2.631 | 9.563 | 2.924 | 73 0 |
| 15 | 5.730 | 1.779 | 6.685 | 2.076 | 7.640 | 2.372 | 8.595 | 2.669 | 9.550 | 2.965 | 45 |
| 30 | 5.722 | 1.804 | 6.676 | 2.105 | 7.630 | 2.406 | 8.583 | 2.706 | 9.537 | 3.007 | 30 |
| 45 | 5.714 | 1.829 | 6.667 | 2.134 | 7.619 | 2.439 | 8.572 | 2.744 | 9.524 | 3.049 | 15 |
| 18 0 | 5.706 | 1.854 | 6.657 | 2.163 | 7.608 | 2.472 | 8.560 | 2.781 | 9.511 | 3.090 | 72 0 |
| 15 | 5.698 | 1.879 | 6.648 | 2.192 | 7.598 | 2.505 | 8.547 | 2.818 | 9.497 | 3.132 | 45 |
| 30 | 5.690 | 1.904 | 6.638 | 2.221 | 7.587 | 2.538 | 8.535 | 2.856 | 9.483 | 3.173 | 30 |
| 45 | 5.682 | 1.929 | 6.629 | 2.250 | 7.575 | 2.572 | 8.522 | 2.893 | 9.469 | 3.214 | 15 |
| 19 0 | 5.673 | 1.953 | 6.619 | 2.279 | 7.564 | 2.605 | 8.510 | 2.930 | 9.455 | 3.256 | 71 0 |
| 15 | 5.665 | 1.978 | 6.609 | 2.308 | 7.553 | 2.638 | 8.497 | 2.967 | 9.441 | 3.297 | 45 |
| 30 | 5.656 | 2.003 | 6.598 | 2.337 | 7.541 | 2.670 | 8.484 | 3.004 | 9.426 | 3.338 | 30 |
| 45 | 5.647 | 2.028 | 6.588 | 2.365 | 7.529 | 2.703 | 8.471 | 3.041 | 9.412 | 3.379 | 15 |
| 20 0 | 5.638 | 2.052 | 6.578 | 2.394 | 7.518 | 2.736 | 8.457 | 3.078 | 9.397 | 3.420 | 70 0 |
| 15 | 5.629 | 2.077 | 6.567 | 2.423 | 7.506 | 2.769 | 8.444 | 3.115 | 9.382 | 3.461 | 45 |
| 30 | 5.620 | 2.101 | 6.557 | 2.451 | 7.493 | 2.802 | 8.430 | 3.152 | 9.367 | 3.502 | 30 |
| 45 | 5.611 | 2.126 | 6.546 | 2.480 | 7.481 | 2.834 | 8.416 | 3.189 | 9.351 | 3.543 | 15 |
| 21 0 | 5.601 | 2.150 | 6.535 | 2.509 | 7.469 | 2.867 | 8.402 | 3.225 | 9.336 | 3.584 | 69 0 |
| 15 | 5.592 | 2.175 | 6.524 | 2.537 | 7.456 | 2.900 | 8.388 | 3.262 | 9.320 | 3.624 | 45 |
| 30 | 5.582 | 2.199 | 6.513 | 2.566 | 7.443 | 2.932 | 8.374 | 3.299 | 9.304 | 3.665 | 30 |
| 45 | 5.573 | 2.223 | 6.502 | 2.594 | 7.430 | 2.964 | 8.359 | 3.335 | 9.288 | 3.706 | 15 |
| 22 0 | 5.563 | 2.248 | 6.490 | 2.622 | 7.417 | 2.997 | 8.345 | 3.371 | 9.272 | 3.746 | 68 0 |
| 15 | 5.553 | 2.272 | 6.479 | 2.651 | 7.404 | 3.029 | 8.330 | 3.408 | 9.255 | 3.787 | 45 |
| 30 | 5.543 | 2.296 | 6.467 | 2.679 | 7.391 | 3.061 | 8.315 | 3.444 | 9.239 | 3.827 | 30 |
| 45 | 5.533 | 2.320 | 6.455 | 2.707 | 7.378 | 3.094 | 8.300 | 3.480 | 9.222 | 3.867 | 15 |
| 23 0 | 5.523 | 2.344 | 6.444 | 2.735 | 7.364 | 3.126 | 8.285 | 3.517 | 9.205 | 3.907 | 67 0 |
| 15 | 5.513 | 2.368 | 6.432 | 2.763 | 7.350 | 3.158 | 8.269 | 3.553 | 9.188 | 3.947 | 45 |
| 30 | 5.502 | 2.392 | 6.419 | 2.791 | 7.336 | 3.190 | 8.254 | 3.589 | 9.171 | 3.988 | 30 |
| 45 | 5.492 | 2.416 | 6.407 | 2.819 | 7.322 | 3.222 | 8.238 | 3.625 | 9.153 | 4.028 | 15 |
| 24 0 | 5.481 | 2.440 | 6.395 | 2.847 | 7.308 | 3.254 | 8.222 | 3.661 | 9.136 | 4.067 | 66 0 |
| 15 | 5.471 | 2.464 | 6.382 | 2.875 | 7.294 | 3.286 | 8.206 | 3.696 | 9.118 | 4.107 | 45 |
| 30 | 5.460 | 2.488 | 6.370 | 2.903 | 7.280 | 3.318 | 8.190 | 3.732 | 9.100 | 4.147 | 30 |
| 45 | 5.449 | 2.512 | 6.357 | 2.931 | 7.265 | 3.349 | 8.173 | 3.768 | 9.081 | 4.187 | 15 |
| 25 0 | 5.438 | 2.536 | 6.344 | 2.958 | 7.250 | 3.381 | 8.157 | 3.804 | 9.063 | 4.226 | 65 0 |
| 15 | 5.427 | 2.559 | 6.331 | 2.986 | 7.236 | 3.413 | 8.140 | 3.839 | 9.045 | 4.266 | 45 |
| 30 | 5.416 | 2.583 | 6.318 | 3.014 | 7.221 | 3.444 | 8.123 | 3.875 | 9.026 | 4.305 | 30 |
| 45 | 5.404 | 2.607 | 6.305 | 3.041 | 7.206 | 3.476 | 8.106 | 3.910 | 9.007 | 4.345 | 15 |
| 26 0 | 5.393 | 2.630 | 6.292 | 3.069 | 7.190 | 3.507 | 8.089 | 3.945 | 8.988 | 4.384 | 64 0 |
| 15 | 5.381 | 2.654 | 6.278 | 3.096 | 7.175 | 3.538 | 8.072 | 3.981 | 8.969 | 4.423 | 45 |
| 30 | 5.370 | 2.677 | 6.265 | 3.123 | 7.160 | 3.570 | 8.054 | 4.016 | 8.949 | 4.462 | 30 |
| 45 | 5.358 | 2.701 | 6.251 | 3.151 | 7.144 | 3.601 | 8.037 | 4.051 | 8.930 | 4.501 | 15 |
| 27 0 | 5.346 | 2.724 | 6.237 | 3.178 | 7.128 | 3.632 | 8.019 | 4.086 | 8.910 | 4.540 | 63 0 |
| 15 | 5.334 | 2.747 | 6.223 | 3.205 | 7.112 | 3.663 | 8.001 | 4.121 | 8.890 | 4.579 | 45 |
| 30 | 5.322 | 2.770 | 6.209 | 3.232 | 7.096 | 3.694 | 7.983 | 4.156 | 8.870 | 4.618 | 30 |
| 45 | 5.310 | 2.794 | 6.195 | 3.259 | 7.080 | 3.725 | 7.965 | 4.190 | 8.850 | 4.656 | 15 |
| 28 0 | 5.298 | 2.817 | 6.181 | 3.286 | 7.064 | 3.756 | 7.947 | 4.225 | 8.829 | 4.695 | 62 0 |
| 15 | 5.285 | 2.840 | 6.166 | 3.313 | 7.047 | 3.787 | 7.928 | 4.260 | 8.809 | 4.733 | 45 |
| 30 | 5.273 | 2.863 | 6.152 | 3.340 | 7.031 | 3.817 | 7.909 | 4.294 | 8.788 | 4.772 | 30 |
| 45 | 5.260 | 2.886 | 6.137 | 3.367 | 7.014 | 3.848 | 7.891 | 4.329 | 8.767 | 4.810 | 15 |
| 29 0 | 5.248 | 2.909 | 6.122 | 3.394 | 6.997 | 3.878 | 7.872 | 4.363 | 8.746 | 4.848 | 61 0 |
| 15 | 5.235 | 2.932 | 6.107 | 3.420 | 6.980 | 3.909 | 7.852 | 4.398 | 8.725 | 4.886 | 45 |
| 30 | 5.222 | 2.955 | 6.093 | 3.447 | 6.963 | 3.939 | 7.833 | 4.432 | 8.704 | 4.924 | 30 |
| 45 | 5.209 | 2.977 | 6.077 | 3.474 | 6.946 | 3.970 | 7.814 | 4.466 | 8.682 | 4.962 | 15 |
| 30 0 | 5.196 | 3.000 | 6.062 | 3.500 | 6.928 | 4.000 | 7.794 | 4.500 | 8.660 | 5.000 | 60 0 |
| ° ′ | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | ° ′ |
| Bearing. | Distance 6. | | Distance 7. | | Distance 8. | | Distance 9. | | Distance 10. | | Bearing. |

| Bearing. | Distance 1. | | Distance 2. | | Distance 3. | | Distance 4. | | Distance 5. | | Bearing. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ° ' | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | ° ' |
| **30** 15 | 0.864 | 0.504 | 1.728 | 1.008 | 2.592 | 1.511 | 3.455 | 2.015 | 4.319 | 2.519 | **59** 45 |
| 30 | 0.862 | 0.508 | 1.723 | 1.015 | 2.585 | 1.523 | 3.447 | 2.030 | 4.308 | 2.538 | 30 |
| 45 | 0.859 | 0.511 | 1.719 | 1.023 | 2.578 | 1.534 | 3.438 | 2.045 | 4.297 | 2.556 | 15 |
| **31** 0 | 0.857 | 0.515 | 1.714 | 1.030 | 2.572 | 1.545 | 3.429 | 2.060 | 4.286 | 2.575 | **59** 0 |
| 15 | 0.855 | 0.519 | 1.710 | 1.038 | 2.565 | 1.556 | 3.420 | 2.075 | 4.275 | 2.594 | 45 |
| 30 | 0.853 | 0.522 | 1.705 | 1.045 | 2.558 | 1.567 | 3.411 | 2.090 | 4.263 | 2.612 | 30 |
| 45 | 0.850 | 0.526 | 1.701 | 1.052 | 2.551 | 1.579 | 3.401 | 2.105 | 4.252 | 2.631 | 15 |
| **32** 0 | 0.848 | 0.530 | 1.696 | 1.060 | 2.544 | 1.590 | 3.392 | 2.120 | 4.240 | 2.650 | **58** 0 |
| 15 | 0.846 | 0.534 | 1.691 | 1.067 | 2.537 | 1.601 | 3.383 | 2.134 | 4.229 | 2.668 | 45 |
| 30 | 0.843 | 0.537 | 1.687 | 1.075 | 2.530 | 1.612 | 3.374 | 2.149 | 4.217 | 2.686 | 30 |
| 45 | 0.841 | 0.541 | 1.682 | 1.082 | 2.523 | 1.623 | 3.364 | 2.164 | 4.205 | 2.705 | 15 |
| **33** 0 | 0.839 | 0.545 | 1.677 | 1.089 | 2.516 | 1.634 | 3.355 | 2.179 | 4.193 | 2.723 | **57** 0 |
| 15 | 0.836 | 0.548 | 1.673 | 1.097 | 2.509 | 1.645 | 3.345 | 2.193 | 4.181 | 2.741 | 45 |
| 30 | 0.834 | 0.552 | 1.668 | 1.104 | 2.502 | 1.656 | 3.336 | 2.208 | 4.169 | 2.760 | 30 |
| 45 | 0.831 | 0.556 | 1.663 | 1.111 | 2.494 | 1.667 | 3.326 | 2.222 | 4.157 | 2.778 | 15 |
| **34** 0 | 0.829 | 0.559 | 1.658 | 1.118 | 2.487 | 1.678 | 3.316 | 2.237 | 4.145 | 2.796 | **56** 0 |
| 15 | 0.827 | 0.563 | 1.653 | 1.126 | 2.480 | 1.688 | 3.306 | 2.251 | 4.133 | 2.814 | 45 |
| 30 | 0.824 | 0.566 | 1.648 | 1.133 | 2.472 | 1.699 | 3.297 | 2.266 | 4.121 | 2.832 | 30 |
| 45 | 0.822 | 0.570 | 1.643 | 1.140 | 2.465 | 1.710 | 3.287 | 2.280 | 4.108 | 2.850 | 15 |
| **35** 0 | 0.819 | 0.574 | 1.638 | 1.147 | 2.457 | 1.721 | 3.277 | 2.294 | 4.096 | 2.868 | **55** 0 |
| 15 | 0.817 | 0.577 | 1.633 | 1.154 | 2.450 | 1.731 | 3.267 | 2.309 | 4.083 | 2.886 | 45 |
| 30 | 0.814 | 0.581 | 1.628 | 1.161 | 2.442 | 1.742 | 3.257 | 2.323 | 4.071 | 2.904 | 30 |
| 45 | 0.812 | 0.584 | 1.623 | 1.168 | 2.435 | 1.753 | 3.246 | 2.337 | 4.058 | 2.921 | 15 |
| **36** 0 | 0.809 | 0.588 | 1.618 | 1.176 | 2.427 | 1.763 | 3.236 | 2.351 | 4.045 | 2.939 | **54** 0 |
| 15 | 0.806 | 0.591 | 1.613 | 1.183 | 2.419 | 1.774 | 3.226 | 2.365 | 4.032 | 2.957 | 45 |
| 30 | 0.804 | 0.595 | 1.608 | 1.190 | 2.412 | 1.784 | 3.215 | 2.379 | 4.019 | 2.974 | 30 |
| 45 | 0.801 | 0.598 | 1.603 | 1.197 | 2.404 | 1.795 | 3.205 | 2.393 | 4.006 | 2.992 | 15 |
| **37** 0 | 0.799 | 0.602 | 1.597 | 1.204 | 2.396 | 1.805 | 3.195 | 2.407 | 3.993 | 3.009 | **53** 0 |
| 15 | 0.796 | 0.605 | 1.592 | 1.211 | 2.388 | 1.816 | 3.184 | 2.421 | 3.980 | 3.026 | 45 |
| 30 | 0.793 | 0.609 | 1.587 | 1.218 | 2.380 | 1.826 | 3.173 | 2.435 | 3.967 | 3.044 | 30 |
| 45 | 0.791 | 0.612 | 1.581 | 1.224 | 2.372 | 1.837 | 3.163 | 2.449 | 3.953 | 3.061 | 15 |
| **38** 0 | 0.788 | 0.616 | 1.576 | 1.231 | 2.364 | 1.847 | 3.152 | 2.463 | 3.940 | 3.078 | **52** 0 |
| 15 | 0.785 | 0.619 | 1.571 | 1.238 | 2.356 | 1.857 | 3.141 | 2.476 | 3.927 | 3.095 | 45 |
| 30 | 0.783 | 0.623 | 1.565 | 1.245 | 2.348 | 1.868 | 3.130 | 2.490 | 3.913 | 3.113 | 30 |
| 45 | 0.780 | 0.626 | 1.560 | 1.252 | 2.340 | 1.878 | 3.120 | 2.504 | 3.899 | 3.130 | 15 |
| **39** 0 | 0.777 | 0.629 | 1.554 | 1.259 | 2.331 | 1.888 | 3.109 | 2.517 | 3.886 | 3.147 | **51** 0 |
| 15 | 0.774 | 0.633 | 1.549 | 1.265 | 2.323 | 1.898 | 3.098 | 2.531 | 3.872 | 3.164 | 45 |
| 30 | 0.772 | 0.636 | 1.543 | 1.272 | 2.315 | 1.908 | 3.086 | 2.544 | 3.858 | 3.180 | 30 |
| 45 | 0.769 | 0.639 | 1.538 | 1.279 | 2.307 | 1.918 | 3.075 | 2.558 | 3.844 | 3.197 | 15 |
| **40** 0 | 0.766 | 0.643 | 1.532 | 1.286 | 2.298 | 1.928 | 3.064 | 2.571 | 3.830 | 3.214 | **50** 0 |
| 15 | 0.763 | 0.646 | 1.526 | 1.292 | 2.290 | 1.938 | 3.053 | 2.584 | 3.816 | 3.231 | 45 |
| 30 | 0.760 | 0.649 | 1.521 | 1.299 | 2.281 | 1.948 | 3.042 | 2.598 | 3.802 | 3.247 | 30 |
| 45 | 0.758 | 0.653 | 1.515 | 1.306 | 2.273 | 1.958 | 3.030 | 2.611 | 3.788 | 3.264 | 15 |
| **41** 0 | 0.755 | 0.656 | 1.509 | 1.312 | 2.264 | 1.968 | 3.019 | 2.624 | 3.774 | 3.280 | **49** 0 |
| 15 | 0.752 | 0.659 | 1.504 | 1.319 | 2.256 | 1.978 | 3.007 | 2.637 | 3.759 | 3.297 | 45 |
| 30 | 0.749 | 0.663 | 1.498 | 1.325 | 2.247 | 1.988 | 2.996 | 2.650 | 3.745 | 3.313 | 30 |
| 45 | 0.746 | 0.666 | 1.492 | 1.332 | 2.238 | 1.998 | 2.984 | 2.664 | 3.730 | 3.329 | 15 |
| **42** 0 | 0.743 | 0.669 | 1.486 | 1.338 | 2.229 | 2.007 | 2.973 | 2.677 | 3.716 | 3.346 | **48** 0 |
| 15 | 0.740 | 0.672 | 1.480 | 1.345 | 2.221 | 2.017 | 2.961 | 2.689 | 3.701 | 3.362 | 45 |
| 30 | 0.737 | 0.676 | 1.475 | 1.351 | 2.212 | 2.027 | 2.949 | 2.702 | 3.686 | 3.378 | 30 |
| 45 | 0.734 | 0.679 | 1.469 | 1.358 | 2.203 | 2.036 | 2.937 | 2.715 | 3.672 | 3.394 | 15 |
| **43** 0 | 0.731 | 0.682 | 1.463 | 1.364 | 2.194 | 2.046 | 2.925 | 2.728 | 3.657 | 3.410 | **47** 0 |
| 15 | 0.728 | 0.685 | 1.457 | 1.370 | 2.185 | 2.056 | 2.913 | 2.741 | 3.642 | 3.426 | 45 |
| 30 | 0.725 | 0.688 | 1.451 | 1.377 | 2.176 | 2.065 | 2.901 | 2.753 | 3.627 | 3.442 | 30 |
| 45 | 0.722 | 0.692 | 1.445 | 1.383 | 2.167 | 2.075 | 2.889 | 2.766 | 3.612 | 3.458 | 15 |
| **44** 0 | 0.719 | 0.695 | 1.439 | 1.389 | 2.158 | 2.084 | 2.877 | 2.779 | 3.597 | 3.473 | **46** 0 |
| 15 | 0.716 | 0.698 | 1.433 | 1.396 | 2.149 | 2.093 | 2.865 | 2.791 | 3.582 | 3.489 | 45 |
| 30 | 0.713 | 0.701 | 1.427 | 1.402 | 2.140 | 2.103 | 2.853 | 2.804 | 3.566 | 3.505 | 30 |
| 45 | 0.710 | 0.704 | 1.420 | 1.408 | 2.131 | 2.112 | 2.841 | 2.816 | 3.551 | 3.520 | 15 |
| **45** 0 | 0.707 | 0.707 | 1.414 | 1.414 | 2.121 | 2.121 | 2.828 | 2.828 | 3.536 | 3.536 | **45** 0 |
| ° ' | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | ° ' |
| Bearing. | Distance 1. | | Distance 2. | | Distance 3. | | Distance 4. | | Distance 5. | | Bearing. |

| Bearing. | Distance 6. | | Distance 7. | | Distance 8. | | Distance 9. | | Distance 10. | | Bearing. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ° ′ | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | ° ′ |
| **30** 15 | 5.183 | 3.023 | 6.047 | 3.526 | 6.911 | 4.030 | 7.775 | 4.534 | 8.638 | 5.038 | **59** 45 |
| 30 | 5.170 | 3.045 | 6.031 | 3.553 | 6.893 | 4.060 | 7.755 | 4.568 | 8.616 | 5.075 | 30 |
| 45 | 5.156 | 3.068 | 6.016 | 3.579 | 6.875 | 4.090 | 7.735 | 4.602 | 8.594 | 5.113 | 15 |
| **31** 0 | 5.143 | 3.090 | 6.000 | 3.605 | 6.857 | 4.120 | 7.715 | 4.635 | 8.572 | 5.150 | **59** 0 |
| 15 | 5.129 | 3.113 | 5.984 | 3.631 | 6.839 | 4.150 | 7.694 | 4.669 | 8.549 | 5.188 | 45 |
| 30 | 5.116 | 3.135 | 5.968 | 3.657 | 6.821 | 4.180 | 7.674 | 4.702 | 8.526 | 5.225 | 30 |
| 45 | 5.102 | 3.157 | 5.952 | 3.683 | 6.803 | 4.210 | 7.653 | 4.736 | 8.504 | 5.262 | 15 |
| **32** 0 | 5.088 | 3.180 | 5.936 | 3.709 | 6.784 | 4.239 | 7.632 | 4.769 | 8.481 | 5.299 | **58** 0 |
| 15 | 5.074 | 3.202 | 5.920 | 3.735 | 6.766 | 4.269 | 7.612 | 4.802 | 8.457 | 5.336 | 45 |
| 30 | 5.060 | 3.224 | 5.904 | 3.761 | 6.747 | 4.298 | 7.591 | 4.836 | 8.434 | 5.373 | 30 |
| 45 | 5.046 | 3.246 | 5.887 | 3.787 | 6.728 | 4.328 | 7.569 | 4.869 | 8.410 | 5.410 | 15 |
| **33** 0 | 5.032 | 3.268 | 5.871 | 3.812 | 6.709 | 4.357 | 7.548 | 4.902 | 8.387 | 5.446 | **57** 0 |
| 15 | 5.018 | 3.290 | 5.854 | 3.838 | 6.690 | 4.386 | 7.527 | 4.935 | 8.363 | 5.483 | 45 |
| 30 | 5.003 | 3.312 | 5.837 | 3.864 | 6.671 | 4.416 | 7.505 | 4.967 | 8.339 | 5.519 | 30 |
| 45 | 4.989 | 3.333 | 5.820 | 3.889 | 6.652 | 4.445 | 7.483 | 5.000 | 8.315 | 5.556 | 15 |
| **34** 0 | 4.974 | 3.355 | 5.803 | 3.914 | 6.632 | 4.474 | 7.461 | 5.033 | 8.290 | 5.592 | **56** 0 |
| 15 | 4.960 | 3.377 | 5.786 | 3.940 | 6.613 | 4.502 | 7.439 | 5.065 | 8.266 | 5.628 | 45 |
| 30 | 4.945 | 3.398 | 5.769 | 3.965 | 6.593 | 4.531 | 7.417 | 5.098 | 8.241 | 5.664 | 30 |
| 45 | 4.930 | 3.420 | 5.752 | 3.990 | 6.573 | 4.560 | 7.395 | 5.130 | 8.217 | 5.700 | 15 |
| **35** 0 | 4.915 | 3.441 | 5.734 | 4.015 | 6.553 | 4.589 | 7.372 | 5.162 | 8.192 | 5.736 | **55** 0 |
| 15 | 4.900 | 3.463 | 5.716 | 4.040 | 6.533 | 4.617 | 7.350 | 5.194 | 8.166 | 5.772 | 45 |
| 30 | 4.885 | 3.484 | 5.699 | 4.065 | 6.513 | 4.646 | 7.327 | 5.226 | 8.141 | 5.807 | 30 |
| 45 | 4.869 | 3.505 | 5.681 | 4.090 | 6.493 | 4.674 | 7.304 | 5.258 | 8.116 | 5.843 | 15 |
| **36** 0 | 4.854 | 3.527 | 5.663 | 4.115 | 6·472 | 4.702 | 7.281 | 5.290 | 8.090 | 5.878 | **54** 0 |
| 15 | 4.839 | 3.548 | 5.645 | 4.139 | 6.452 | 4.730 | 7.258 | 5.322 | 8.064 | 5.913 | 45 |
| 30 | 4.823 | 3.569 | 5.627 | 4.164 | 6.431 | 4.759 | 7.235 | 5.353 | 8.039 | 5.948 | 30 |
| 45 | 4.808 | 3.590 | 5.609 | 4.188 | 6.410 | 4.787 | 7.211 | 5.385 | 8.013 | 5.983 | 15 |
| **37** 0 | 4.792 | 3.611 | 5.590 | 4.213 | 6.389 | 4.815 | 7.188 | 5.416 | 7.986 | 6.018 | **53** 0 |
| 15 | 4.776 | 3.632 | 5.572 | 4.237 | 6.368 | 4.842 | 7.164 | 5.448 | 7.960 | 6.053 | 45 |
| 30 | 4.760 | 3.653 | 5.554 | 4.261 | 6.347 | 4.870 | 7.140 | 5.479 | 7.934 | 6.088 | 30 |
| 45 | 4.744 | 3.673 | 5.535 | 4.286 | 6.326 | 4.898 | 7.116 | 5.510 | 7.907 | 6.122 | 15 |
| **38** 0 | 4.728 | 3.694 | 5.516 | 4.310 | 6.304 | 4.925 | 7.092 | 5.541 | 7.880 | 6.157 | **52** 0 |
| 15 | 4.712 | 3.715 | 5.497 | 4.334 | 6.283 | 4.953 | 7.068 | 5.572 | 7.853 | 6.191 | 45 |
| 30 | 4.696 | 3.735 | 5.478 | 4.358 | 6.261 | 4.980 | 7.043 | 5.603 | 7.826 | 6.225 | 30 |
| 45 | 4.679 | 3.756 | 5.459 | 4.381 | 6.239 | 5.007 | 7.019 | 5.633 | 7.799 | 6.259 | 15 |
| **39** 0 | 4.663 | 3.776 | 5.440 | 4.405 | 6.217 | 5.035 | 6.994 | 5.664 | 7.772 | 6.293 | **51** 0 |
| 15 | 4.646 | 3.796 | 5.421 | 4.429 | 6.195 | 5.062 | 6.970 | 5.694 | 7.744 | 6.327 | 45 |
| 30 | 4.630 | 3.816 | 5.401 | 4.453 | 6.173 | 5.089 | 6.945 | 5.725 | 7.716 | 6.361 | 30 |
| 45 | 4.613 | 3.837 | 5.382 | 4.476 | 6.151 | 5.116 | 6.920 | 5.755 | 7.688 | 6.394 | 15 |
| **40** 0 | 4.596 | 3.857 | 5.362 | 4.500 | 6.128 | 5.142 | 6.894 | 5.785 | 7.660 | 6.428 | **50** 0 |
| 15 | 4.579 | 3.877 | 5.343 | 4.523 | 6.106 | 5.169 | 6.869 | 5.815 | 7.632 | 6.461 | 45 |
| 30 | 4.562 | 3.897 | 5.323 | 4.546 | 6.083 | 5.196 | 6.844 | 5.845 | 7.604 | 6.495 | 30 |
| 45 | 4.545 | 3.917 | 5.303 | 4.569 | 6.061 | 5.222 | 6.818 | 5.875 | 7.576 | 6.528 | 15 |
| **41** 0 | 4.528 | 3.936 | 5.283 | 4.592 | 6.038 | 5.248 | 6.792 | 5.905 | 7.547 | 6.561 | **49** 0 |
| 15 | 4.511 | 3.956 | 5.263 | 4.615 | 6.015 | 5.275 | 6.767 | 5.934 | 7.518 | 6.594 | 45 |
| 30 | 4.494 | 3.976 | 5.243 | 4.638 | 5.992 | 5.301 | 6.741 | 5.964 | 7.490 | 6.626 | 30 |
| 45 | 4.476 | 3.995 | 5.222 | 4.661 | 5.968 | 5.327 | 6.715 | 5.993 | 7.461 | 6.659 | 15 |
| **42** 0 | 4.459 | 4.015 | 5.202 | 4.684 | 5.945 | 5.353 | 6.688 | 6.022 | 7.431 | 6.691 | **48** 0 |
| 15 | 4.441 | 4.034 | 5.182 | 4.707 | 5.922 | 5.379 | 6.662 | 6.051 | 7.402 | 6.724 | 45 |
| 30 | 4.424 | 4.054 | 5.161 | 4.729 | 5.898 | 5.405 | 6.635 | 6.080 | 7.373 | 6.756 | 30 |
| 45 | 4.406 | 4.073 | 5.140 | 4.752 | 5.875 | 5.430 | 6.609 | 6.109 | 7.343 | 6.788 | 15 |
| **43** 0 | 4.388 | 4.092 | 5.119 | 4.774 | 5.851 | 5.456 | 6.582 | 6.138 | 7.314 | 6.820 | **47** 0 |
| 15 | 4.370 | 4.111 | 5.099 | 4.796 | 5.827 | 5.481 | 6.555 | 6.167 | 7.284 | 6.852 | 45 |
| 30 | 4.352 | 4.130 | 5.078 | 4.818 | 5.803 | 5.507 | 6.528 | 6.195 | 7.254 | 6.884 | 30 |
| 45 | 4.334 | 4.149 | 5.057 | 4.841 | 5.779 | 5.532 | 6.501 | 6.224 | 7.224 | 6.915 | 15 |
| **44** 0 | 4.316 | 4.168 | 5.035 | 4.863 | 5.755 | 5.557 | 6.474 | 6.252 | 7.193 | 6.947 | **46** 0 |
| 15 | 4.298 | 4.187 | 5.014 | 4.885 | 5.730 | 5.582 | 6.447 | 6.280 | 7.163 | 6.978 | 45 |
| 30 | 4.280 | 4.206 | 4.993 | 4.906 | 5.706 | 5.607 | 6.419 | 6.308 | 7.133 | 7.009 | 30 |
| 45 | 4.261 | 4.224 | 4.971 | 4.928 | 5.681 | 5.632 | 6.392 | 6.336 | 7.102 | 7.040 | 15 |
| **45** 0 | 4.243 | 4.243 | 4.950 | 4.950 | 5.657 | 5.657 | 6.364 | 6.364 | 7.071 | 7.071 | **45** 0 |
| ° ′ | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | Dep. | Lat. | ° ′ |
| Bearing. | Distance 6. | | Distance 7. | | Distance 8. | | Distance 9. | | Distance 10. | | Bearing. |
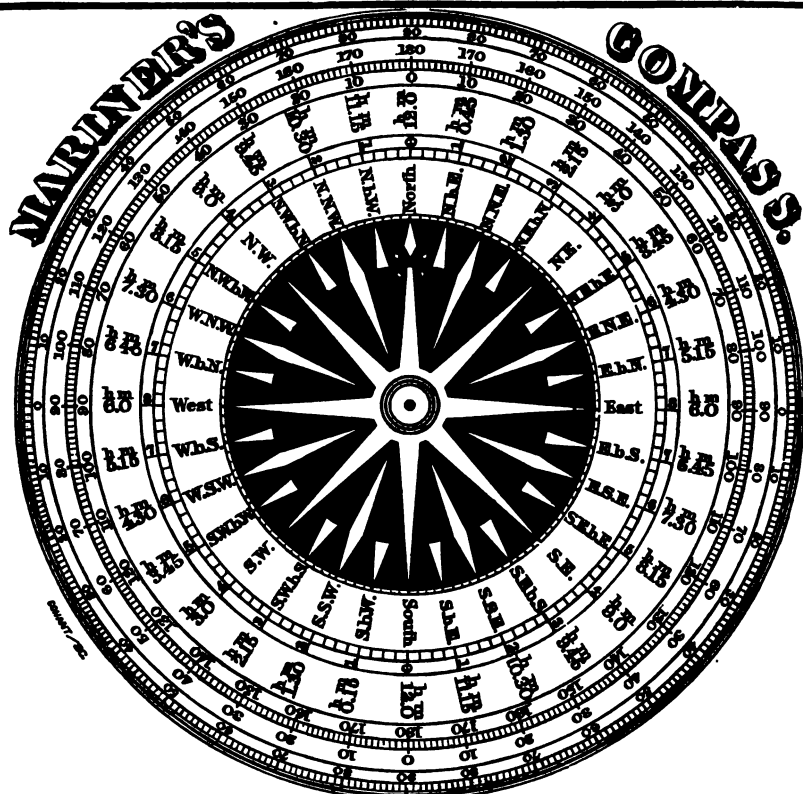
## A TABLE OF THE ANGLES

*Which every Point and Quarter Point of the Compass makes with the Meridian.*

| North. | | Points. | ° ′ ″ | Points. | South. | |
|---|---|---|---|---|---|---|
| | | 0 - ¼ | 2 48 45 | 0 - ¼ | | |
| | | 0 - ½ | 5 37 30 | 0 - ½ | | |
| | | 0 - ¾ | 8 26 15 | 0 - ¾ | | |
| N. by E. | N. by W. | 1 | 11 15 0 | 1 | S. by E. | S. by W. |
| | | 1 - ¼ | 14 3 45 | 1 - ¼ | | |
| | | 1 - ½ | 16 52 30 | 1 - ½ | | |
| | | 1 - ¾ | 19 41 15 | 1 - ¾ | | |
| N.N.E. | N.N.W. | 2 | 22 30 0 | 2 | S.S.E. | S.S.W. |
| | | 2 - ¼ | 25 18 45 | 2 - ¼ | | |
| | | 2 - ½ | 28 7 30 | 2 - ½ | | |
| | | 2 - ¾ | 30 56 15 | 2 - ¾ | | |
| N.E. by N. | N.W. by N. | 3 | 33 45 0 | 3 | S.E. by S. | S.W. by S. |
| | | 3 - ¼ | 36 33 45 | 3 - ¼ | | |
| | | 3 - ½ | 39 22 30 | 3 - ½ | | |
| | | 3 - ¾ | 42 11 15 | 3 - ¾ | | |
| N.E. | N.W. | 4 | 45 0 0 | 4 | S.E. | S.W. |
| | | 4 - ¼ | 47 48 45 | 4 - ¼ | | |
| | | 4 - ½ | 50 37 30 | 4 - ½ | | |
| | | 4 - ¾ | 53 26 15 | 4 - ¾ | | |
| N.E. by E | N.W. by W. | 5 | 56 15 0 | 5 | S.E. by E. | S.W. by W. |
| | | 5 - ¼ | 59 3 45 | 5 - ¼ | | |
| | | 5 - ½ | 61 52 30 | 5 - ½ | | |
| | | 5 - ¾ | 64 41 15 | 5 - ¾ | | |
| E.N.E. | W.N.W. | 6 | 67 30 0 | 6 | E.S.E. | W.S.W. |
| | | 6 - ¼ | 70 18 45 | 6 - ¼ | | |
| | | 6 - ½ | 73 7 30 | 6 - ½ | | |
| | | 6 - ¾ | 75 56 15 | 6 - ¾ | | |
| E. by N. | W. by N. | 7 | 78 45 0 | 7 | E. by S. | W. by S. |
| | | 7 - ¼ | 81 33 45 | 7 - ¼ | | |
| | | 7 - ½ | 84 22 30 | 7 - ½ | | |
| | | 7 - ¾ | 87 11 15 | 7 - ¾ | | |
| East. | West. | 8 | 90 0 0 | 8 | East. | West. |